THE Soybean Digest

Should the Support Price on 1959-Crop Soybeans Be Lowered?

Tom Hieronymus says "Yes!"

See his article inside

JANUARY • 1959

VOLUME 19 • NUMBER 3

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THE Soybean Digest

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IN THIS ISSUE

THE SOYBEAN DIGEST

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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the members of the Association.

EDITOR'S DESK

. . . By GEO. M. STRAYER

SUPPORT MUST BE REALISTIC

We recommend to you for careful reading the article by Dr. Hieronymus in this issue. It deals with a basic philosophy—a basic concept—of our industry.

The huge 1958 crop of soybeans, coming as a result of both increased acreage and an extremely favorable growing season, now makes it appear that there will be sizable stocks of soybeans in CCC hands at the end of the crop year. If this proves true, it will be the first time in the history of our industry when the CCC has been a major factor in our market.

This situation calls for careful reappraisal of our policies—both governmental and industry. We must be sure to provide maximum possible returns to the producer of soybeans, commensurate with the maintenance of longtime markets and the broadening and expansion of new markets. We must keep soybeans in their proper price relationships with the other crops that compete for the same farm acreage. A support price on 1959-crop soybeans too low will reduce acreage below our needs, merely aggravate the corn and cotton surpluses. A support price too high will aggravate our own surplus position, force us into the unfavorable position held by some other crops in recent years.

Decisions in this field call for careful analysis, careful thought, wise action. Our industry has been favored with intelligent leadership in past years, has benefited materially from it. Now we need to carefully weigh all the factors, consider what the end results might be from all possible courses of action, then pick that course which offers the most possibilities. If drastic action is really needed, let us have drastic action! At the same time, let us be sure of the premises on which we base such action.

Undoubtedly we must revise our soybean price supports for the 1959 crop. We must be realistic in the figure we establish. From what your editor has seen of oilseed and oil supplies and consumption in various areas of the world in the past year I doubt if we need to go as far as Dr. Hieronymus has suggested. But the important thing is that we face up to realities, move as we need to move, act with wisdom and decisiveness, and that we continue to use support prices only as disaster insurance and not as the support and ceiling price of our commodity.

NEED LARGE QUANTITIES OF OILS

In next month's issue I hope to bring you a summary of the recent market survey trip through the Southeast Asia countries. It was a revelation to visit some of the countries which through a period of years have been the major sources of oilseeds and oils for world trade, and to see what is happening to production and to consumption in those countries.

Likewise, it was an education to visit personally with men in the copra and coconut oil trade, and to learn of developments and trends in that industry. Along with it the visits with palm oil and palm kernel producers and the analysis of trends and plans in that segment of the vegetable oil industry were also very revealing.

It will suffice to say that there are millions of people in the world who are fully aware of pangs of hunger, and who will use vast quantities of oil above and beyond the present consumption levels. As income levels rise food becomes the first major purchase. Oil is among the first of the purchases.

We happen to be residents of one of the few areas of the world that are expanding production of vegetable oils at the present time. For the first time in our country's history we have produced more than we can consume in our own country—and we think in terms of surpluses.

Much of the world looks at it differently. There is need for far more than is being produced.

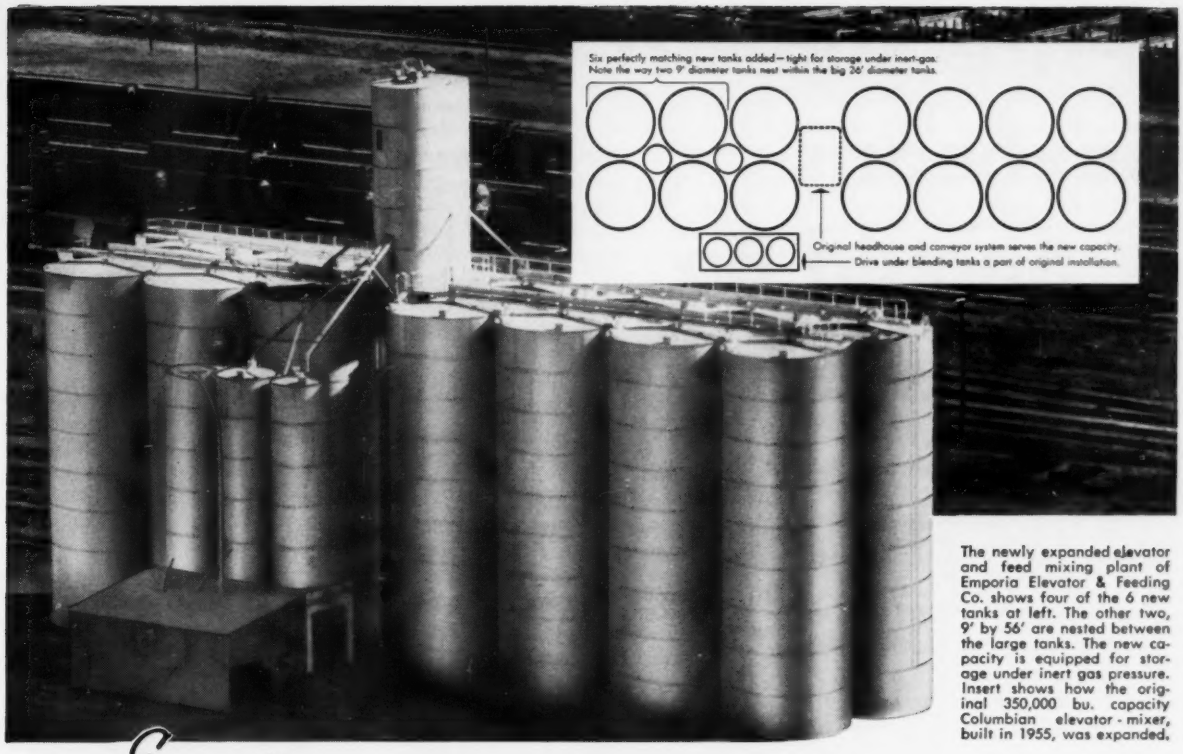
BURLISON CAN'T BE REPLACED

W. L. Burlison, whose death is reported elsewhere in this issue, was one of the men who were most responsible for the growth of the soybean industry in the United States. His leadership has been generally acclaimed, and he was one of the two men first named to Honorary Life Membership in the American Soybean Association. As head of the department of agronomy of the University of Illinois his sincere belief in and steady plugging for the soybean as a crop to assist in the diversification of Illinois acres helped make that state the nation's leader.

An extremely busy man, he was never too busy to visit and counsel with anyone interested in soybeans.

Dr. Burlison probably served on more different committees of the American Soybean Association at more times than any other individual. He was one of those pioneers who lived to see his favorite crop become a major factor in American agriculture, and from it he derived extreme pleasure.

There can be only one Dr. W. L. Burlison. In his death the soybean industry suffers loss that can never be recovered.



The newly expanded elevator and feed mixing plant of Emporia Elevator & Feeding Co. shows four of the 6 new tanks at left. The other two, 9' by 56' are nested between the large tanks. The new capacity is equipped for storage under inert gas pressure. Insert shows how the original 350,000 bu. capacity Columbian elevator - mixer, built in 1955, was expanded.

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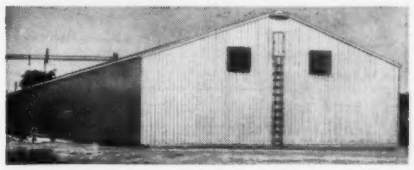

Designed for Grain Storage Columbian rigid frame steel buildings are widely used for flat grain storage because of their unique, reinforced construction, designed to withstand the horizontal pressures of stored grain at the lower walls and ends. At top, a 50' x 160' x 14' Columbian grain storage building of the Inglehart Corp., Falls City, Neb.; at bottom, a similar Columbian building of W. R. Milling Co., Conway, Kansas. Columbian Steel Grain Storage buildings, easily erected, are available in 40', 50', 60' and 70' widths and any desired length.

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Price Support on 1959-Crop Soybeans Should Be Reduced

DR. HIERONYMUS says the support price on 1959-crop soybeans should be lowered 46¢, to $1.63, in order to provide an active market for all the oil from present production of beans. He thinks the meal will take care of itself if priced right. We invite comment from our readers on this article. We believe not all will agree with its conclusions.—Editors.

By T. A. HIERONYMUS

Associate Professor, Agricultural Marketing, Department of Agricultural Economics, University of Illinois College of Agriculture, Urbana

SOYBEANS are in trouble. There is not a large enough market to absorb current production. We are faced with the need to find larger markets or to reduce production. This must be done now or government inventories will be built up. The examples of other crops—corn and wheat in particular—are sufficient to prove the need for immediate action and underscore the futility of remedies taken too late or in half steps. The soybean industry should take its medicine now and should take a large enough dose to effect a cure.

The soybean markets, export and domestic, are expanding rapidly enough to absorb current production increases, and the expansion can be continued for the indefinite future. If the expanding need for high-protein concentrates is to be met, there must be further expansion of soybean production. The trouble lies with the oil fraction. Oil production has been expanded past its market size at current prices. The market for soybean oil can be expanded further only by a major reduction in price.

T. A. Hieronymus

Soybeans must be allowed to sell at prices that will permit the continued expansion of the market for soybean meal and that will permit oil to compete effectively with other fats and oils for the existing world market.

Soybean production in 1958 is in excess of requirements. Part of the increase in production is the result of an increase in acreage, and part is the result of unusually favorable growing conditions. The problem has been brought on rapidly because of the weather. This may be fortunate because it so clearly illustrates the nature of the problem as it will likely exist in the years ahead. Production in 1958 was estimated at 573 million bushels on Oct. 1. Seed requirements from this crop will be about 33 million bushels.

Exports may reach 95 to 100 million, leaving a crush availability of 440 million. A reasonable estimate of the potential use of meal in 1958-59 indicates a crush of 385 million bushels, leaving an increase in carryover of 45 million bushels from this crop if the very high Oct. 1 yield estimates materialize. The yields forecast on Oct. 1 were 3.4 bushels above the average of the last 10 years. Normal yields this year on the expanded acreage would have produced 492 million bushels against a projected meal, seed, and export need of 515 million.

A crush of 385 million bushels of soybeans would produce 4,235 million pounds of oil. If we allocate projected production of lard and cottonseed oil between domestic use and exports, and if we assume that domestic use of edible fats and oils per capita will remain at the same level as it has in recent years, 2,689 million pounds of soybean oil will be needed in the domestic market. This would leave 1,543 million pounds to be exported. If we take into account the projected exports of 1,737 million pounds of lard, cottonseed oil, and soybeans, a total export of 3,280 million pounds will be needed. The average for the period 1952-56 was 1,894 million pounds. In 1956-57 exports of the three totaled 2,779 million pounds, and in 1957-58 about 2,422 million.

General world conditions in fats and oils are such this year that an export of the big three at the 1956-57 record level would be a very optimistic forecast. Such an amount would result in an export of 1,042 million pounds of soybean oil and require a crush of 339 million bushels of soybeans.

On the meal side a crush of 385 million bushels can be used; and on the oil side, 339 million. The result of this 46-million-bushel gap will be some kind of compromise. There will be continued downward pressure on oil and upward pressure on meal as a result of the support price for soybeans. The combined value of the two must be enough more than the price of soybeans to encourage processing.

The effect of the price of oil and meal pivoting around the loan will be a smaller crush than would exist without the loan. Without a support price on soybeans, we would produce the needed meal and let the oil price decline to a point at which oil would find its way into export and into domestic inventory.

A second effect will be to push

meal prices up to levels that will restrict use below the amount that would otherwise be used and to reduce the export of fats and oils.

Meal Market Expansion

Production and use of soybean meal in the United States have expanded at a very rapid rate during the past 20 years (see Figures 1 and 2). Production of other high-protein concentrates has increased very little, and production per protein-consuming animal unit is at the same level as it was 20 years ago.

The increase in protein concentrate consumption per animal unit has been associated with a substantial and continuing increase in output per 100 pounds of feed fed. This increased productivity is especially notable in swine and poultry. Use of high proteins has increased greatly for these two classes of animals. The use of high-protein concentrates has been stable in the production of milk and beef.[1]

Wells[2] estimates that substantial deficits in protein still remain. He estimated that in 1955 about 198 pounds of high proteins were needed per grain-consuming animal unit and the amount fed was 133 pounds, a deficit of 33%. Since 1955, consumption has increased by only a small amount.

In addition to the feeding deficit at the present time, it should be expected that substantially increased amounts of protein will be needed to supply increasing livestock numbers. Population is increasing rapidly. If current per capita consumption levels of livestock products are to be maintained and expanded, livestock numbers will need to be increased.

The production of feed grains has been increasing. Substantial quantities of wheat are being produced in excess of requirements. It is not unlikely that either wheat will be moved into animal feed use or land will be taken out of wheat and put into feed grain production.

Increased livestock numbers will require more protein, and increased feed grains will need to be supplemented by high-protein concentrates.

How large is this potential market? Livestock numbers will increase at about the same rate as feed grain production increases. Feed grain production in the future will be influenced by the acreage used for feed grains. Corn and oat acreages have been decreasing, and barley and grain sorghum acreages have been increasing in recent years. Potential changes in corn price support legislation will result in increased corn acreage.

During the past 10 years, feed grain production has increased at the rate of 2.6% per year. If this rate of increase is maintained, somewhat more than a 30% increase in protein supplement will be required 5 years from now. Because soybean meal makes up only about half of the protein supplement that is fed and production of the other protein supplements is increasing slowly, soybean meal production will need to be about doubled to maintain current rates of protein supplement feeding.

During the past 10 years, substantial inventories of feed grain have been accumulated under price support programs. If these supplies are used up in the years immediately ahead, large amounts of proteins will be required to supplement them.

When we combine all three of these market growth factors (current protein deficits, increased feed grain production, and inventory liquidation), our estimate of soybean meal market potential becomes fantastic. It is clear that if meal production is continued at the same rate in the decade ahead as it has in the decade ending, a shortage of high-protein concentrates will remain.

If this potential market is to be exploited, soybean meal must be reasonably priced. Its price must be close enough to feed grain prices to prevent synthetic substitutes from competing. During the 1949 to 1955 period, there was very rapid expansion of urea use. Urea combined with feed grains is an effective substitute for high-protein concentrates in some kinds of feeding. Either soybean meal must be priced to meet this competition, or its market cannot be expanded at a maximum rate.

The export market for soybean meal as soybeans has a large growth potential. Whole soybeans are exported primarily to northern Europe and Japan. In Japan the meal fraction is used for human food. In Europe the meal fraction is used for livestock feed.

There is an expanding market for high-protein concentrates, particularly oilseed cakes and meals, in northern Europe.[3] The general conditions giving rise to expanded meal demand are similar to those of the United States. However, market expansion will probably be slower in Europe. Population is expanding at a slower rate, and supplies of high-protein concentrate are relatively more abundant. The technology of use of soybean meal is also less advanced than in the United States. As technology of use advances and as the appreciation of soybean meal as a protein source improves, sub-

[1] Wells, C. M., the Expanding Market for Soybean Meal, U. of I. Bulletin 620, October 1957.
[2] Op. cit., p. 6 to 8.
[3] See reports by T. A. Hieronymus in Foreign Agr. Circular, FAS, USDA, Nov. 15, 1957, and Soybean Digest, September 1958.

Fig. 1--High-Protein Concentrates Available for Feeding, by Kind, 1937-56

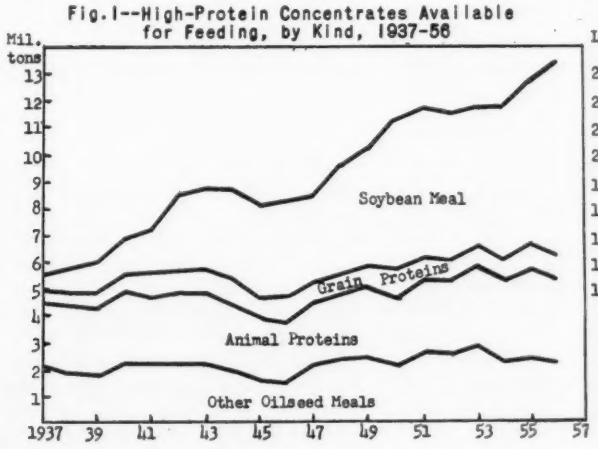
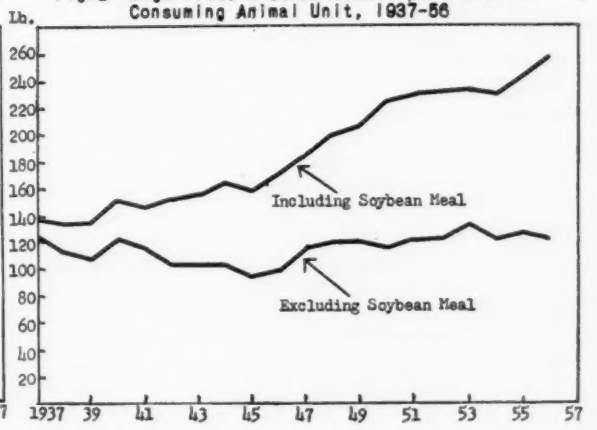


Fig. 2--High-Protein Concentrates per Protein-Consuming Animal Unit, 1937-56



stantial increases in demand will occur.

The Oil Problem

Supplies of edible fats and oils are in very troublesome abundance in the United States. Table 1 shows production, domestic disappearance, and exports of the four principal fats and oils (butter, lard, cottonseed oil, and soybean oil) for the period October 1949 to Sept. 30, 1958, and projects the 1958-59 situation. These These four fats and oils make up about 90% to 95% of the total domestic production of edible fats and oils.

Production of fats and oils other than soybean oil is stable. Therefore increasing quantities of soybean oil are needed to maintain domestic per capita disappearance. But these increased requirements are very small in relation to the increase in soybean oil production.

Per capita disappearance of the four fats and oils is quite stable. The demand is extremely inelastic in current uses. The possibilities of expanding the domestic market appear very slight except at very low prices. It is possible that greater quantities of soybean oil could be used in drying-oil industries. But this would require a substitution of soybean oil for linseed oil, and flaxseed is in domestic surplus.

The mixed feed industry is using increasing quantities of fats in formula feeds. This market is supplied from inedible tallow, the price of which can go down to very low levels before it is driven out of production, because it is an otherwise waste byproduct. The next lower use of soybean oil is likely to be as a chemical reagent. It is not clear what price would be required to open up this market, but it would put soybean oil very close to being a free good.

Price is a minor consideration in the production of butter, lard, and cottonseed oil. Nothing is accomplished in reducing competing domestic production by selling soybean oil cheap in the domestic market.

The limited domestic market for soybean oil, the expanding market for soybean meal, and the fact that one cannot be produced without the other make the export market for edible fats and oils of paramount importance to the further growth and development of the soybean industry.

The Export Market

Following World War II and the expansion of the soybean crop, the United States became a major supplier of fats and oils for Europe. Exports of the big four are shown in Table 1. A record high was reached in 1950-51. Exports fell off during the following 2 years with the de-stocking following the Korean war and with the cottonseed oil buying program of the USDA. This buying program tended to hold U. S. oil prices above world prices, as well as generally to support world oil prices.

In early 1954 the USDA initiated an oil sales program that liquidated its stocks in 18 to 20 months. This was mostly cottonseed oil and accounts for the large sales of cottonseed oil shown in the table and the change in the cottonseed-soybean oil ratio between 1954-55 and 1957-58.

The sale of oil for foreign currency was initiated under Public Law 480 in the latter part of the 1954-55 crop year and got up to about 740 million pounds in 1957-58.

Exports for dollars and under ICA grants reached a high of nearly 2.2 billion pounds in 1955-56. The decline in dollar volume in 1957-58 was the result of liquidation of stocks accumulated during the Suez crisis and the very large peanut crop, particularly in Africa in 1957.

Until 1958-59 the problem of exporting the domestic surplus was solved by a dollar business of about 2 billion pounds per year and by P. L. 480 sales. The prospect that these two methods will accomplish the job in 1958-59 *and the years ahead* is extremely remote. The exportable surplus production has jumped from a troublesome 2.4 billion pounds in 1957-58 to a huge 3.9 billion in 1958-59. If we assume a dollar export market for 2 billion pounds, a P. L. 480 export of 1.9 billion pounds will be needed to avoid an increase in the carryover of oil and soybeans. This program is 2.6 times as large as last year's. If the increase in meal use is projected to 9%, which appears reasonable in view of the normal market growth and increases in livestock numbers, a total export of 3.3 billion pounds will be needed.

The remarkable increase in the size of the problem in 1958-59 is the result of (1) a sharp increase in soybean acreage, (2) unusually high soybean yields, (3) an increase in cotton production, and (4) a sharp increase in lard production. Three of these four factors need to be projected into the future if we are to accurately appraise the export problem. Feed production and carryover supplies are large, pointing

TABLE 1.—U. S. PRODUCTION, DOMESTIC DISAPPEARANCE, AND EXPORTS OF THE FOUR PRINCIPAL EDIBLE FATS AND OILS (MILLION POUNDS) 1949-1957

	Crop year beginning Oct. 1									
	1949	1950	1951	1952	1953	1954	1955	1956	1957[1]	1958[2]
Production										
Butter	1,701	1,472	1,376	1,578	1,647	1,536	1,568	1,548	1,550	1,500
Lard	2,626	2,811	2,918	2,509	2,248	2,564	2,852	2,624	2,450	2,700
Cottonseed oil	1,799	1,229	1,729	1,840	2,106	1,723	1,893	1,626	1,425	1,525
Soybean oil	1,938	2,454	2,444	2,536	2,350	2,711	3,142	3,431	3,750	4,851[3] 4,232[6]
Oil content soybeans exported	128	272	167	320	416	666	741	937	950	1,067
Total	8,192	8,238	8,634	8,783	8,767	9,200	10,196	10,166	10,125	11,643
Total excluding soybean oil	6,126	5,512	6,023	5,927	6,001	5,823	6,313	5,798	5,425	5,725
Domestic disappearance										
Butter	1,609	1,552	1,375	1,352	1,438	1,540	1,533	1,475	1,500	1,480
Lard	2,022	2,203	2,071	2,111	1,773	1,959	2,067	2,049	2,000	2,350
Cottonseed oil	1,671	1,115	1,404	1,162	1,824	1,543	1,384	1,307	1,175	1,225
Soybean oil	1,646	1,906	2,150	2,462	2,326	2,609	2,539	2,565	3,000	3,689
Total	6,948	6,776	7,000	7,087	7,361	7,651	7,523	7,396	7,675	7,744
Per capita	46.0	44.3	44.9	44.9	45.7	46.7	45.0	43.5	44.4	44.0
Exports										
Butter	10	42	3	14	45	190	240	18	27	20
Lard	584	630	751	515	456	587	719	590	390	350
Cottonseed oil	149	59	126	55	402	716	617	427	250	300
Soybean oil	291	490	271	93	71	50	556	807	835	2,162 1,543[6]
Soybean oil as soybeans	128	272	167	320	416	666	741	937	920	1,067
Total	1,162	1,493	1,318	997	1,390	2,209	2,873	2,779	2,422	3,899[4] 3,280[6]
Exports under P. L. 480	.....	.....	.....	.....	.....	117	682	615	740	1,899[5] 1,280[6]
Exports for dollars and ICA	1,162	1,493	1,318	997	1,390	2,092	2,191	2,164	1,682	2,000

[1] Preliminary. [2] Forecast basis Sept. 1 crop conditions. [3] Assumes no increase in carryover Oct. 1, 1959. [4] Need to hold soybean carryover at 21 million bushels. [5] Needed. [6] Basis of a 9% increase in meal use.

TABLE 2.—WORLD PRODUCTION OF SELECTED MAJOR FATS AND OILS AND TOTAL WORLD EDIBLE AND SOAP FATS AND OILS, PREWAR AND 1946-1956 (MILLION POUNDS)

	Average 1934-38	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956[1]
Butter fat content	8,685	6,383	6,615	6,746	7,223	7,572	7,495	7,557	8,034	8,287	8,349	8,572
Lard	7,772	6,127	6,879	7,170	7,903	8,863	9,266	9,579	6,243	9,460	9,961	10,375
Total	16,457	12,510	13,494	13,916	15,126	16,435	16,761	17,136	17,277	17,747	18,310	18,947
Cottonseed oil	4,056	2,747	2,755	3,154	3,722	4,162	3,928	4,787	4,809	5,084	5,032	5,152
Rapeseed oil	3,077	2,640	3,775	3,571	4,158	3,878	3,910	3,801	4,041	3,791	3,964	4,438
Olive oil	2,003	1,236	1,837	2,875	1,119	2,768	1,414	3,394	1,931	2,857	2,407	1,873
Sesame oil	1,636	1,420	1,654	1,624	1,946	1,777	1,913	1,774	1,907	1,907	1,943	1,773
Total	10,772	8,043	10,021	11,224	10,945	12,585	11,165	13,756	12,688	13,639	13,346	13,236
Soybean oil	3,975	4,493	4,913	4,744	5,332	4,582	5,943	5,033	6,032	5,816	6,428	6,846
Peanut oil	5,862	5,624	6,200	6,289	6,294	6,100	6,253	5,974	5,951	6,625	7,119	7,517
Sunflower oil	1,365	1,689	1,765	2,084	2,452	2,392	2,679	2,490	2,695	3,154	2,540	4,359
Coconut oil	3,503	1,718	3,109	3,513	3,490	3,587	4,294	4,041	3,908	4,198	4,457	4,541
Palm kernel oil	727	638	702	741	799	914	829	833	906	957	922	961
Palm oil	1,947	1,354	1,537	1,887	2,147	2,374	2,224	2,224	2,383	2,539	2,477	2,498
Total	17,379	15,516	18,226	19,258	20,514	19,949	22,222	20,595	21,875	23,289	24,043	26,722
Total	44,608	36,069	41,741	44,398	46,585	48,969	50,148	51,487	51,840	54,675	55,699	58,905
World total edible and soap oils	49,441	40,607	47,264	49,841	52,425	55,159	56,467	58,921	58,797	61,836	63,234	66,796
Per capita (lb.)	23.2	16.6	19.3	20.2	21.1	22.0	22.4	23.2	23.1	23.3	23.5	24.4

[1] Preliminary. Source: Berg, Eric, Estimated World Production of Fats and Oils, College of Agriculture, University of Illinois, AERR 23, 1958.

to increased hog production and hence to larger lard supplies in the future. Recent changes in legislation pertaining to cotton price programs indicate increased cottonseed oil production. The rapid expansion of soybean meal consumption at firm prices in relation to other feed prices points to the need for further increase in soybean acreage.

It is quite clear that the need to increase exports of edible fats and oils is not a temporary one. The immediate problem presented by 1958-59 situation must not be allowed to overshadow the long-term problem of increased oil exports.

Expanding the Export Market

The key to increased exports over the long term is a reduction in the price of fats and oils. Cheap oil will accomplish two things:

1—It will stop further increases in the production of competing seed oils.

2—It will facilitate increases in the consumption of fats and oils in areas of the world where per capita consumption is low.

The areas of the world where per capita fat and oil consumption is low and where incomes are low are also the areas that supply fats and oils in world trade in competition with U. S. exports. Oil needs to be priced cheap enough to retard competing production and make it possible for the world's poor people to afford to consume their own production. This would enable the United States to take a larger share of the import requirements of deficit areas.

Table 2 shows world production of the major edible and soap fats and oils, prewar and 1946-56. Figure 3 shows the same thing. These 12 fats and oils make up nearly 90% of the world production of edible and soap fats and oils. They are shown in three major groupings based on their supply competitiveness. Butter and lard do not compete in supply and price with soybean oil. They do compete in consumption. Butter is a high-priced fat that moves in small volume in international trade. It is a semi-byproduct of the dairy industry. Lard is a byproduct of the swine industry.

In the second group, cottonseed oil is a byproduct of cotton production. It moves in rather modest volume in international trade. Rapeseed oil is the only vegetable oil produced in northern Europe in volume. It is a low-quality oil and, generally speaking, is raised under high guaranteed prices. It is not exported in significant volume from the general area in which it is produced. Olive oil is produced in the Mediterranean Basin and is a high-quality, high-priced oil that moves out of its general production area in modest volume. Sesame oil is indigenous to Asia and moves into world trade in small volume.

The five oils, peanut, sunflower, coconut, palm kernel, and palm, compete most directly with soybean oil. They all come from plants that are produced primarily for their oilseeds. All move in volume in world trade, and all are within the same general price range. These five oils are the ones on which price changes in soybean oil can be expected to have an effect.

The current troublesome level of world production of edible fats and oils has developed since 1950 as the result of increases in production in the competing group. Current levels of world oil prices are encouraging increases in production at a rate in excess of population growth.

Within the competing group, increases from 1950 to 1956 were as follows:

	Million pounds
Soybean oil	2,264
Peanut oil	1,417
Sunflower oil	1,967
Coconut oil	954
Palm kernel oil	47
Palm oil	124

The three fat and oil sources that offer the most problematic competition for soybean oil are peanut, sunflower, and copra. Put differently, if peanut, sunflower, and coconut oil production had remained constant from 1950 to 1956, per capita production of all edible and soap oils in 1956 would have averaged 22.8 pounds. The expansion rate in soybean oil production has not been greater than was needed to maintain a constant world per capita production of all fats and oils. There would have been an adequate market for soybean oil had not the production of the other oils also increased.

The essential point is that production of many of the world's fats and oils is price-responsive. The most striking example is babassu. It is estimated that one Brazilian state alone has enough trees—if the oil from them were harvested—to produce 230 billion pounds, which is more than thrice the current world production of all edible and soap fats and oils.

Figure 4 shows the world exports of the major edible and soap fats and oils and the retained production (exports plus retained production being equal to production). World exports have been increasing fairly rapidly in recent years, although they are not much greater than prewar.

World exports are made up primarily of the group of oils designated in Table 2 as the soybean oil competing group. The difference between the competing and noncompeting groups becomes more striking when we take into account the large amounts of cottonseed oil exported from the United States in 1954-56 as an aftermath of the cottonseed oil buying program.

The significance of these comparisons is that the declining world prices of fats and oils since 1951 have caused a high proportion of the increases in production to be absorbed in the areas of production rather than moved into world trade.

The advantage of soybeans is in their low yield of oil compared to other oil crops

Western Europe is the principal importer of food fats and oils. Imports since 1950 have increased more rapidly than has indigenous production. Because total supply is tied very closely to population, the per capita supply has remained about constant.

Eastern Europe is a net importer of an increasing quantity of edible fats and oils. Most of this supply is imported from Asia—China in particular.

North and Central America, primarily the United States, has shifted from being a major net importer prewar to a major exporter at the present time.

South America, which was an exporter as recently as 1951, became a major importer in the 1952-56 period.

Asian net exports were only about half as great in 1956 as in the prewar period. The decrease was primarily in soybeans from China and peanuts from India. Asian exports have been about steady since 1950.

Africa is the most important supply area for European edible fats and oils. About half of African production is exported.

What has been the effect of declining fat and oil prices since 1951? North European imports have not been affected. In that area the demand for fats and oils is extremely inelastic. The total size of the market for the world's fat and oil exports is affected only moderately by price. In southern Europe (Spain, Italy, Greece, and Turkey) consumption has been increased by price declines.

Through the U. S. cottonseed oil sales program in 1954 and 1955 and since then through the differential pricing system of P. L. 480, prices of fats and oils have been decreased. Consumption has responded with important per capita increases.

During the period of falling prices, imports and total supply in eastern Europe have increased. Eastern Europe and the USSR are relatively low-income, low-fat-consuming areas.

In North and Central America, price declines have very little effect on consumption. On balance it is a high-income, high-fat-consuming area.

In South America there has been a major increase in consumption during declining prices. At high prices South America exports, and at low prices it imports. Failure of the increase in sunflower seed production to show up in world trade is associated with increased consumption at home.

Asia is an area of low incomes and low fat consumption. The failure of Asia to regain its prewar place in world exports is associated with the availability of exports from North America. It appears likely that, without the cheaper supplies from the United States, exports from Asia would have increased during the past decade.

This review of production, use, and export indicates that the price policy of the United States needs to be directed toward preventing further increases in production of peanut, sunflower, coconut, palm, and palm kernel oils. It appears that prices during recent years have succeeded in retarding production of palm and palm kernel oils. They are too high to retard the others. These are crops that are produced primarily for their oil. There is no doubt that some price level would put production of these several crops in an unprofitable position and retard or actually decrease production.

The review also indicates that cheap oil causes indigenous production to be consumed at home rather than exported. Home demand for edible fats and oils produced in Africa, South America, and Asia is sufficiently elastic to absorb much greater than current quantities of both.

Competitive Position

U. S. soybeans, African and Asian peanuts, Filipino and Indonesian copra, and South American sunflower seed are in a competitive struggle for world markets. In this struggle soybeans are in a favorable position. High-protein concentrates have an expanding market that is growing much faster than population. It is a high-income, high-price market. Edible oils are in surplus in the high-income areas of the world. Markets can be expanded only in the areas where per capita consumption is low. These are the low-income, low-price areas.

The advantage of soybeans lies in their relatively low yield of oil and high yield of meal. The oilseed crops with which soybeans compete most directly have a much higher percentage of oil and a lower percentage of meal.

The computations shown below demonstrate the effect on product value of a 20% reduction in the price of oil of various oilseeds. These computations show the yield of oil, oil price in dollars per metric ton at European ports, value of oil per ton of seed, yield of meal per ton of seed, cake and meal prices at European ports, value of meal per ton of seed, and combined value of oil and meal per ton of seed. They are

Fig.3--Edible and Soap Fat Production: Total and Per Capita

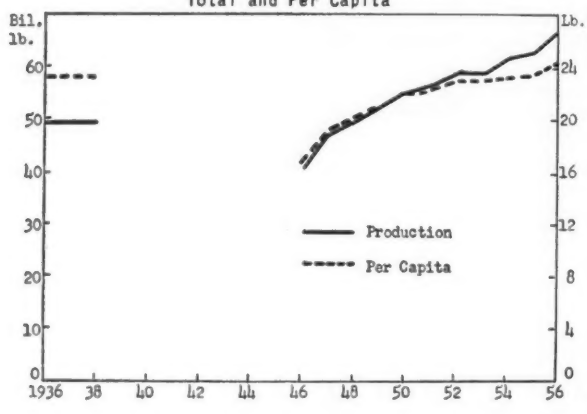
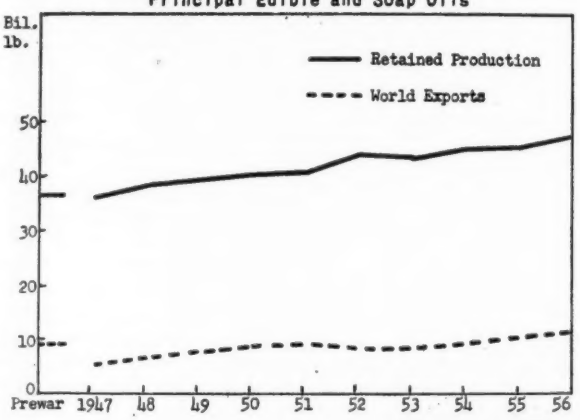


Fig.4--Retained Production and Exports of Principal Edible and Soap Oils



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prices as of Oct. 18, 1958, and are in dollars per ton. The second computation is the same as the first except that all oil prices were reduced 20% before the values were established.

Seed	Percent oil	Oil price Dollars	Oil value Dollars	Percent meal	Meal price Dollars	Meal value Dollars	Combined value Dollars
Computation 1							
Soybeans	17	230.00	39.10	83	94.50	78.45	117.55
Peanuts	47	254.80	119.76	53	94.50	50.09	169.85
Copra	64	336.00	215.04	35	77.70	27.20	242.24
Sunflower	25	263.00	65.75	38	69.08	26.25	92.00
Computation 2							
Soybeans	17	184.00	31.28	83	94.50	78.45	109.73
Peanuts	47	203.84	95.80	53	94.50	50.09	145.89
Copra	64	268.80	172.03	35	77.70	27.20	199.23
Sunflower	25	210.40	52.60	38	69.08	26.25	78.85

If we assume that the four seeds are in competitive balance—at equal levels of profitability—at the current time, the effect of reducing oil prices is to materially shift the balance in favor of soybeans. Values per ton and percentage reductions are as follows:

Seed	Dollar reduction	Percent reduction
Soybeans	7.82	6.7
Peanuts	23.96	14.1
Copra	43.01	17.8
Sunflower	13.15	14.3

By way of further example, a 23¢-per-bushel reduction in soybean price will cost peanut growers 72¢ for an equal weight. While it is unfortunate that we are in a price war with peanut growers, the advantage lies on our side. If it is true that production of edible fats and oils is in excess of existing markets at current prices, there is not much doubt which commodity will win out.

Alternatives to Cheap Oil

There are alternative suggestions for maintaining U. S. oil exports. One is to expand sale for foreign currency, a second is to donate oil to charitable agencies abroad, and a third is to work out a two-price system. As short-term, one-shot operations, they are workable and have been employed with success. Whether they can be used in sufficient volume to cope with an exportable surplus of the 1958 size is questionable.

These measures will likely fail as permanent measures. The first weakness is that unquestionably they involve export-dumping, and this is a practice that invites retaliatory measures that will eventually stop its effectiveness.

The sale of commodities for foreign currencies is a sophisticated dumping scheme. While the prices at which the different items are sold are nominally the same as dollar sales, the foreign currencies are not worth their nominal value. Hence prices are, in reality, reduced. This method not only differentiates between domestic and export price, but also differentiates among the prices charged to the different countries of destination.

In the first place, the price is reduced only for those countries that are ruled eligible for P. L. 480 benefits. Second, the terms of the agreement vary by countries, and hence the effective price varies. Third, the different currencies have different real values so that, when all are accepted at nominal values, there are actual price differences. That the method is complicated will not permanently obscure the fact that it is export-dumping.

Differential price-cutting prevents prices from being effective in reducing production and exports of competing fats and oils. The hard-currency market prices remain at their higher level.

If P. L. 480 activities are increased to sufficient levels to cope with the expanding problem, it will become necessary to ship oil into areas where per capita consumption is low. These are areas that are exporters of fats and oils. We will then have a triangular movement. It will be a wasteful process.

A straight two-price system would be better than the P. L. 480 system because it would act to retard competing production and exports. But it has the disadvantage of being crude and obvious.

What Price for Oil?

There is no way to estimate the level of oil prices that would be needed to enable the United States to export all of the fats and oils necessary to bring production and use into balance. Clearly it is a price substantially lower than that of recent years. The guiding principle is to set the support price on soybeans low enough to give oil substantial downside room.

The hour is late. Had we acted 3 or 4 years ago, there would have been time to experiment. Getting the support price too high gets the crop into trouble. Putting the support price below the equilibrium price has not proved harmful in the past—a support is not a ceiling when there is no surplus, as has been repeatedly shown in the case of soybeans.

During the 1957-58 crop year, the average price of soybean oil, tank cars at Midwest mills, was 10.8¢ per pound. A 20% reduction would be 8.6¢. A 25% reduction would be 8.1¢. A support price for soybeans low enough to permit 8¢ oil is a good point of departure.

What Price for Soybeans?

The support price of soybeans should be set low enough to permit 8¢ oil, $45-per-ton meal, and a processing margin wide enough to call forth a large crush. In 1957-58 soybean meal averaged $53 per ton in bulk at Decatur. With lower feed grain prices and lower livestock prices (particularly for hogs), $45 appears to be a price that will permit maximum meal market expansion.

At 8¢ the oil fraction of a bushel of soybeans is worth 88¢, and at $45 the meal fraction is worth $1.06, for a total of $1.94. During 1957-58 the difference between track Illinois points price of No. 1 soybeans and product values computed in the above way averaged 24¢. During the period October 1952 to September 1957, the average difference was 15.5¢. Say that 20¢ is allowed. For No. 1 soybeans this is a track price of $1.74 or a farm price of $1.69. The national average support price is currently 6¢ below the Illinois support price. The national average support price would thus be $1.63, scaled off for lower than No. 1 quality.

A reduction of 46¢ per bushel in the support price appears drastic. But it is justified because the situation is drastic. Very soon decisions are going to be made that will determine whether soybeans are going to return to being a commercial, competitive crop or whether they are going to become wards of the government.

By historical standards a reduction of 46¢ in soybean supports has a fortunate precedent. In 1953 the support price was $2.56; in 1955 it was $2.04. The expansion in the soybean crop during the past 5 years was made possible by this reduction.

That the support price should be set at $1.63 does not mean that the average price will be that low. In my judgment the 1959 soybean crop will sell at an average price above $1.63. The support must be set enough below the equilibrium to provide for contingencies. If it is not set below the equilibrium price, it can do more harm than good.

THE NEWS IN BRIEF

THE CROP, MARKETS AND OTHER ITEMS OF NOTE

Lower Support Would Cut 1959 Acreage

Grower observers generally believe that **a lower support price on 1959 crop soybeans would mean less acreage,** and most think corn and cotton will cut into soybeans somewhat.

Keith Bilbrey, county agent for North Mississippi County, Ark., sees 1959 soybean acreage as being down some depending on (1) the size of the increase in cotton acreage and (2) the extent to which the support price is lowered on soybeans.

Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, Ark., believes soybean acreage in the Arkansas rice area will be slightly lower, but will hold about the same in cotton areas.

A report for South Carolina and the central Savannah River area of Georgia is that acreage may be about the same in 1959 as in 1958.

Illinois observers look for soybean acreage to be the same to 5% lower and most think a lower price support would cut down acreage.

Chester B. Biddle, Remington, Ind., expects soybean acreage to go down in 1959. "Talk is more corn." Any lowering of the support price on soybeans means less bean acreage if corn support remains the same, in Biddle's opinion.

John W. Evans, Montevideo, Minn., says 1959 soybean acreage in southwest central Minnesota could be down due to increased corn acreage in prospect.

O. H. Acom, Wardell, Mo., looks for 1959 soybean acreage in his area to be down a little because of more cotton acres. Kermit F. Head, MFA grain and feed division, Mexico, Mo., looks for about the same soybean acreage in 1959 as in 1958.

Elmer C. Buster, Kansas Soya Products Co., Emporia, Kans., thinks the Kansas soybean acreage in 1959 will be the same to higher than the 1958 acreage. The state's soybean acreage almost doubled last year.

Some Bean Movement In January?

Some observers look for a **fair bean movement in Illinois and Indiana early in the new year if the price approaches the loan level.** One Illinois opinion is that farmers may sell a fair amount of beans in January, February and March at about $2.10, 5¢ under support level in central Illinois.

J. E. Johnson, Champaign, Ill., reports there has already been some sales at $2.10 in central Illinois, in late December. A southern Illinois source expects a large movement in January.

Biddle at Remington, Ind., says farmers are holding 75% of the crop in northwest Indiana and may sell after Jan. 1 if the price goes up. He reports many inquiries about the January price outlook.

Bilbrey at Blytheville, Ark., reports 2 million bushels or a little less are in storage in Mississippi County and will be sold when and if the price exceeds the loan a few cents.

Hartz at Stuttgart, Ark., writes there were rather heavy farm sales of soybeans in his area in mid-December.

Acom at Wardell, Mo., says farmers are holding 25%-35% of the crop there and expect to sell near the loan price. Head at Mexico, Mo., says farmers in the area are holding probably 60% of the crop and are looking for an improvement in price after the first of the year.

A South Carolina-Georgia report is that farmers are holding 40% of the crop and some will be sold at $2.06 after Jan. 1.

Cold weather hampered harvest operations in some southern areas in December and scattered fields of soybeans were reported still to be harvested in Virginia, North Carolina and Tennessee at year's end.

Memphis Rail Rate Hearing

A hearing on freight rates on export soybeans from the southwest and south to gulf ports originally set for Feb. 18 has been advanced to 9:30 a.m. standard time, Feb. 17, at Hotel Peabody, Memphis, Tenn., Harold D. McCoy, secretary of the Interstate Commerce Commission, reports. The hearing will be before Examiner L. H. Dishman.

The hearing concerns reduced freight rates on export beans as announced by the railroads but vacated by ICC.

Export Activity by Soybean Men

A survey of Mediterranean countries by the Soybean Council of America to determine soybean export possibilities in the area has been postponed. However, Russell Hudson of USDA's Foreign Agricultural Service will meet Council President Howard Roach and Ersel Walley, chairman of the American Soybean Association's trade development committee, in Israel on Jan. 14. **The three men will visit Israel, Turkey and Greece in late January and early February in connection with export business.**

Roach and Walley are now in New Delhi, India, where they are in charge of the soybean exhibit at the U. S. solo fair.

Mediterranean Basin production of olive oil for the third consecutive season is expected to exceed 1 million short tons, according to FAS. While the forecast for 1958-59 represents a decline of 8% from 1957-58, the quantity exceeds the 1954-57 average. (Trade observers in Spain and Italy believe the FAS estimate is 30% to 40% too high for those two countries.) The 1957-58 estimate has been revised upward by 9% to 1.2 million tons. More than 95% of the world's olive oil is produced in the Mediterranean Basin.

USDA on Dec. 20 announced an agreement with Yugoslavia for the purchase by that country of $9.9 million worth (about 75 million pounds) of soybean or cottonseed oil under the P. L. 480 program.

Big Increase In Meal Futures Trading

Trading in soybean futures at 3.1 billion bushels was about 30% smaller in 1958 than it was in 1957, according to Rodger R. Kauffman, administrator of the Commodity Exchange Authority.

The cottonseed oil futures volume for 1958 was estimated at 3.5 billion pounds and for soybean oil at 9.4 billion pounds, both about 11% below the pervious year.

Mr. Kauffman said **the largest volume increase among the 21 commodities under CEA regulation during the year was in soybean meal,** with a record 106 million tons, 82% more than in 1957.

Cargill to Build at Norfolk, Va.

Cargill, Inc., will build a major soybean processing plant at Norfolk, Va., in 1959. The new extraction plant, to have an initial capacity of 7 million bushels annually, will be adjacent to a present 2,250,000-bushel Cargill export grain elevator on the Norfolk ocean-front, and will be the largest in the surrounding five-state area.

Fred M. Seed, vice president in charge of the firm's vegetable oil division, said the company also plans construction or purchase of several procurement-station grain elevators at locations still undetermined in Virginia, Maryland, Delaware and North and South Carolina.

Carl Heidrich, president of the Miami Margarine Co., Cincinnati, Ohio, was elected chairman of the board of directors of the National Association of Margarine Manufacturers at the anuual meeting. Siert F. Riepma, Washington, D. C., was reelected president and treasurer. Robert G. Spears, Lever Brothers Co., New York, was elected secretary.

Jan. 31 Is Deadline For Loans

Remember: If you wish to take out **loan or purchase agreement** on 1958-crop soybeans you are holding, **you have only through Jan. 31 to do so.** Arragements must be completed with your county ASC committee by that date.

Sixth in a series

Soybean Research In Illinois

HENRY HADLEY, University of Illinois soybean geneticist, is making close observations in the field and laboratory on the inner workings of the soybean plant.

SOYBEANS ON STILTS? R. W. Howell, plant physiologist at the U. S. Regional Soybean Laboratory, inspects soybeans treated with gibberellin. Scientists hope to increase the distance from ground to the lower pods.

EFFECTS OF WEEDS on yields are being studied by Ellery Knake. He has allowed different weed populations to grow in different soybean test plots. Yields can then be measured.

By HAROLD D. GUITHER
Assistant Extension Editor, University of Illinois

FOR OVER 30 years, Illinois farmers have paced the nation in soybean yields and production. In 1957 slightly over 30% of the total crop flowed from the combines of Illinois farmers.

Vigorous research and extension programs at the University of Illinois College of Agriculture are helping keep Illinois in its top position in soybean production. This work is underway in the departments of agronomy, plant pathology, agricultural economics, animal science, and home economics. The U. S. Regional Soybean Laboratory has had its headquarters at the University since 1936.

Harold D. Guither

Developing New Varieties

Not only Illinois farmers but soybean growers throughout the United States benefit from the research conducted by the U. S. Regional Soybean Laboratory at Urbana. As a part of the Agricultural Research Service of the U. S. Department of Agriculture, the Regional Laboratory works cooperatively with the experiment stations in 12 North Central and 12 Southern States. All research efforts in laboratory, greenhouse, and open field are directed to developing improved varieties.

Since beginning in 1936, plant breeders have released 19 improved varieties adapted to all ranges of climate from the northern Minnesota border to the Gulf of Mexico. The newest variety to be developed is Shelby. Seed will be released to the Illinois, Indiana, and Missouri farmers for seed increase in 1959.

Shelby is adapted to central and southern Illinois and areas of other states in this same latitude. It is higher yielding than Lincoln and 5 to 6 days earlier than Clark. J. L. Cartter, director of the Regional Soybean Laboratory, believes it will replace most of the Lincoln and some of the Adams beans now grown.

As a source of material for developing new varieties, research workers have established a germ plasm collection of about 4,000 varieties and introductions from all parts of the world. Those adapted to Southern States are maintained at Stoneville, Miss., while all others are maintained at Urbana.

From this collection, plant pathologists can select those types which show resistance to certain diseases. Plant breeders can select those that exhibit other desirable features to incorporate into new crosses. Research workers are continually adding to this collection.

Lookout For Diseases

Although no major disease has yet threatened to destroy our American

soybean crop, plant pathologists are studying those diseases that have appeared and are helping plant breeders in their selection and development of disease resistant varieties.

For the past 5 years, D. W. Chamberlain, plant pathologist with the Regional Soybean Laboratory, has planted about 400 varieties in a soybean disease nursery. On this 1-acre plot grown in continuous soybeans, conditions are ideal for disease to

D. W. CHAMBERLAIN, plant pathologist with the Regional Soybean Laboratory, makes close inspection on hundreds of soybean varieties to identify diseases and help plant breeders select for resistance.

build up and attack the susceptible varieties. Septoria brown spot, brown stem rot, bacterial pustule, and bacterial blight have been observed in this nursery at the University of Illinois agronomy farm. On the University's soil experiment field at Oblong in southern Illinois, Chamberlain has tested about 150 varieties for resistance to bud blight, another serious disease if it became widespread.

In another study, Chamberlain is studying the purple seed stain that shows up in soybeans when harvested. This disease caused by a fungus seriously affects quality and market value of the crop.

Fighting soybean diseases is often a cooperative undertaking between plant pathologist and plant breeder. A good example of this is the fight against phytophthora, a serious stem and root rot of soybeans. By selecting resistant strains and crossing with adapted varieties, R. L. Bernard has incorporated resistance into the resulting crosses.

Field Experiments

Some of the most interesting research in soybeans is underway on the University of Illinois agronomy farm.

During 1957 and 1958, R. W. Howell, plant physiologist with the Regional Laboratory, applied gibberellin, the plant growth hormone, to soybeans. In 1957, he found the treated plants and untreated plants yielded about the same. But he also noticed that the distance from the ground to the first node of the plant was much greater on the treated beans. So in 1958, he carried out more extensive tests. If treating with gibberellin will raise the distance from the ground to the lower pods, farmers may be able to save more beans at harvest. Howell figures that saving just one more pod per plant at harvest would add up to 2 or more bushels an acre.

Laboratory Research

Not all soybean research in Illinois is confined to the open fields.

In the search to find out more about the inner workings of the soybean plant, Henry Hadley, soybean geneticist in the department of agronomy, is making a close study of the number and behavior of the chromosomes in the plant. These parts of the plant carry the genes, the determiners of the many features of the plant—color, leaf size, the hairy features, structure and behavior of the plant. To make these studies, Hadley takes the tissues from the living plant and observes their normal and unusual features under powerful microscopes.

As another phase of his research, Hadley has treated various soybean plants with colchicine, hoping to double the number of chromosomes. In some crops superior plants have been produced by this process. Some have been more disease resistant. So far, Hadley reports the results on soybeans don't look very promising.

Another laboratory project consists of an intensive study of chlorophyl in the soybean leaves. William Starnes, a graduate assistant, has found definite differences between varieties. Eventually this study might lead to higher yielding varieties.

In another laboratory, R. W. Howell is making biochemical analysis of the way oil is formed in the soybean plant and the quality of this oil. Such studies may also make possible the development of soybean varieties which will produce beans with the most desirable oil qualities.

Greenhouse Research

Greenhouses make possible a year around research program that would not be possible otherwise. More closely controlled temperature and light conditions are possible, too.

By using the greenhouse, R. L. Bernard has been able to produce three generations of soybeans a year in his breeding investigations. J. L. Cartter and R. W. Howell have carried out tests to show that temperatures at certain periods of growth have definite effects on the oil content of beans. Higher temperatures have produced higher oil content in the seed. Many other studies have also been carried out with the greenhouse facilities.

Successful Growing Methods

With the coming of new soybean varieties have come many questions from farmers about the best time to plant, the best row spacing, the best variety for different planting dates.

To find some of these answers, J. W. Pendleton, Henry Hadley, and Richard Bernard set up a study during 1958 that included four different planting dates during May and June, row spacings of 8, 24, 32 and 40 inches, and using Chippewa, Harosoy, Shelby, and Clark varieties. With harvest of these plots, some new guides for the best cultural methods with the latest varieties are available.

Controlling weeds in soybeans is also getting major attention. F. W. Slife has tested chemicals for 7 years. So far he has found preemergence treatments of Randox the most satisfactory method of controlling weeds in soybeans. Ellery Knake, working under Slife's direction, is studying the effects of weeds on soybean yields. Last year he compared the yields of beans with no giant foxtail and with various stands of the weed. He found that with a clean plot, the beans would yield 43 bushels an acre but with the undisturbed band of foxtail in the row the yield dropped to 26 bushels. On plots where some of the foxtail was removed, the yield went up.

Feeding Value of Meal

Researchers at the Dixon Springs Experiment Station tested soybean meal, linseed meal, and cottonseed meal alone and in various combinations in winter feeding yearling steers. The steers received about 70% ground ear corn, 20% ground hay, and 10% protein supplement.

These feeds were mixed and self-fed. The rations provided equal protein and total digestible nutrients to all eight lots of steers. The results showed little or no advantage for feeding a mixture of protein supplements.

In another feeding test for finishing steers in drylot, W. W. Albert, A. L. Neumann, and G. E. Mitchell, Jr., found that costs of gains and feed efficiency favored oil meal as the source of protein supplement.

Research with soybean meal for swine feeding has shown its great value as a protein supplement and at the same time has helped build an expanding market for one of the soybean grower's major products.

In tests with weanling pigs, D. E. Becker and other Illinois swine research workers have found that a blend of soybean oil meal produced higher average daily gains and more efficient use of feed than blended meat and bone scraps as the source of protein. In another study they found that pigs from 40 to 100 pounds need a minimum of 14% protein in a corn-soybean meal ration and at least 16% protein in a corn-fish meal ration. For pigs from 100 to 200 pounds, they found that only 12% protein is needed when either soybean meal or fish meal was used as the source of protein.

Poultry scientists H. M. Scott and D. C. Snetsinger have recently completed a study on the adequacy of soybean meal as a sole source of protein for chick growth. Chicks were fed highly refined rations containing 15%, 20%, 25%, 30% and 35% protein. Amino acids in varying amounts were fed at each level of protein. The 30% protein diet proved most effective in promoting growth. And at this protein level, the amino acids had much less effect. These findings showed that at 30% protein diet has no need for supplemental sulfur amino acids.

Previous research with soybean meal for poultry showed that more efficient feed conversion was possible with a 50% protein meal than the 44% protein concentrate. Since that time, 50% meal has been used extensively in formulating poultry and swine ration because this meal is free from unusable hulls.

Finding Markets

With rapid expansion in soybean production, the use of soybean products is constantly changing. Agricultural marketing economists at the University of Illinois College of Agriculture are working to anticipate and guide changes in use, marketing channels, and pricing arrangements for soybeans.

Research in the changes in transportation methods is also in progress. Rising railroad rates and lower truck and water rates have changed the direction of flow for many beans.

Studies of world production and trade in edible and soap fats and oils have been in progress since 1949. Aiming to appraise the export potential for soybean oil, this work helps establish the destinations for exports. The Illinois economists are trying to determine methods for raising the competitive position of soybean oil in foreign markets.

The economists also recognize that the size of the market for high protein concentrates will set the ultimate size of the U. S. soybean crop. They are appraising the extent of protein deficits, demand expansion for protein concentrates, and methods for expanding use of soybean meal. T. A. Hieronymus made a firsthand study of potential exports of soybeans and soybean meal to northwest Europe in 1957. Trade and price policies that will exploit the competitive advantage of soybeans need to be developed.

Another area of research is in soybean pricing arrangements. Soybean and soybean product prices have been quite variable. Basic studies of speculative pricing designed to increase the quality of speculation and reduce price variability are in progress.

Production Costs

To guide farmers in making sound decisions, farm management studies including the cost of producing crops and livestock are underway continuously at the Illinois Experiment Station. A detailed cost breakdown on 25 central Illinois farms for 1957 was to be completed in the fall of 1958.

Home Economics Research

Illinois home economics research workers are trying to find out why soybeans keep their firm nutty texture after cooking when most other beans become tender and mealy. Frances O. Van Duyne and other home economists believe one way that they can find this out is to determine the amounts of certain complex carbohydrates in soybeans.

They are now determining the pentosan content of Favorite, Hahto, Jogun, Kanrich, Kanrich-Jogun and Kim varieties. Freshly harvested green soybeans were blanched, cooled, and hulled in September. The fresh beans were sampled and analyzed and others were frozen or canned. After 6 months storage, the frozen and canned beans were ground, dried, and prepared for analyses.

Food research workers have recently completed a study of the thiamine content and palatability of frozen and canned green soybeans and of mature soybeans prepared for serving after two methods of soaking and two methods of cooking. These findings are being prepared for publication.

Utilization Research

The important task of finding new uses for soybeans also takes place in Illinois. This work is underway at the Northern Regional Research Laboratory at Peoria. This lab is putting its efforts on crops grown in the North Central States. And certainly soybeans qualify as an important crop in this area.

Research Has Paid

These are only the highlights of the present research program on soybeans and soybean products in Illinois. From research in the past has emerged a new crop, a new industry, and a new source of income for those who produce, process, and market soybeans.

Certainly Illinois soybean growers will agree with J. L. Cartter when he wrote in the Soybean Digest only 2 years ago, "The need for pioneering work is as great as it ever was. Soybean research has paid substantial dividends in the past and we have reason to feel that in the future it will continue to give a good return on the investment."

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Soybean Varieties

The leading varieties acreagewise in soybean growing states as reported by state statisticians, crop improvement associations and agronomists

WHAT ARE the leading soybean varieties acreagewise in the United States?

Crop reporting services in several of the leading soybean growing states made surveys in 1956 or 1957. And the Soybean Digest has secured estimates of the relative acreage devoted to leading soybean varieties from state statisticians, crop improvement associations and agronomists in other states.

Hawkeye continues as the leading variety in several of the northern states. This includes Illinois with 39% of the total harvested acreage in 1957, Iowa with 58% and Indiana with 43%. Hawkeye was the leading variety in Nebraska and tied with Blackhawk on acreage in South Dakota, with 27%.

Harosoy, which has been coming up fast in some of these states in recent years, was second in Indiana with 31%, and Illinois with 25% of the acreage.

Capital was the leading Minnesota variety in 1956, accounting for 29% of the state's acreage. Blackhawk was second with 26%.

Illinois. Hawkeye was the leading Illinois variety for the 7th consecutive year, according to a survey in 1957 by the state's crop reporting service. Harosoy has been gaining acreage rapidly for 4 years and accounts for one-fourth of the acreage.

Other leading varieties and their percentage of the total soybean acreage in Illinois in 1957: Adams 14%, Clark 10%, Lincoln 6%, Blackhawk 2%, Wabash 1%, Chief 1%.

Iowa. C. R. Weber and J. M. Dunleavy of the Iowa State Experiment Station report the percentage of total acreage occupied by different varieties, based on a 1957 survey; Hawkeye 58%, Blackhawk 18%, Adams 9%, Clark 6%, Chippewa 3%, Lincoln 3%, and others 2%.

Another survey showed Hawkeye the leading variety in every one of the nine Iowa districts. In the northern one-third of the state Blackhawk was next to Hawkeye in popularity, but very little of the Blackhawk variety was planted elsewhere in the state.

Plantings of Adams and Lincoln were reported for every district, but only in the southern two-thirds of the state are they common enough to be significant. Clark, a relatively new variety, is second only to Hawkeye in the southern one-third of the state. This variety has gained considerably in popularity since a 1954 survey.

Indiana. Lincoln (10%) and Clark (8%) were next to Hawkeye and Harosoy in popularity in Indiana in 1957 and these four varieties accounted for 92% of the Indiana harvested soybean acreage.

Perry and Kingwa were also reported but the acreage was relatively small.

More than 98% of the Blackhawk acreage was grown in the northern and central counties where 94% of the Hawkeye and 97% of the Harosoy acreages were also grown.

In southern Indiana Clark was the leading variety with 59% of the Clark acreage grown there. Nearly half of all Lincoln soybeans was grown in central Indiana counties.

Minnesota. Capital far exceeded all other varieties in the rapidly expanding northwest and west central producing areas, with over half of the planted acreage. It ranked second in the south central and southeastern districts, and third in the southwest.

Blackhawk had a substantial margin in the three southern districts and was second in the west central and east central areas. The third ranking variety in the state, Ottawa Mandarin, led in central and east central districts.

Other varieties planted in 1956 in order of importance were: Manchu, Wisconsin 606, Hawkeye, Harosoy, and Chippewa.

South Dakota. Blackhawk and Hawkeye are leading varieties in South Dakota. Each was grown on 27% of the 1957 soybean acreage.

Other varieties grown in the state in order of importance and percent of acreage in 1957: Capital 11%; Chippewa 10%; Grant 3%; Ottawa Mandarin 2%; Manchu types 2%; and Lincoln 2%.

Seventeen other varieties were reported in a survey in September 1957. They made up a total of 16% of the state's 1957 planted acres.

Blackhawk is generally grown north of highway 16, and later maturing varieties such as Hawkeye are more prevalent south of highway 16 in South Dakota.

Arkansas. Fifty percent or more of the acreage is in Lee. Ogden is second with 12% to 15% of the acreage, followed by Dorman with 10% to 12%.

Other important varieties are Dortchsoy 31, Jackson, Dortchsoy 2A and Hale Ogden 2.

Nebraska. Certified seed growers are listed as having the following varieties: Hawkeye, Harosoy, Adams, Clark and Lincoln, with by far the largest number growing Hawkeye.

Tennessee. Probably 80% or more of the acreage was devoted to the Ogden variety until the last year or two. Lee is gaining in popularity and now occupies 15% to 20% of the acreage.

South Carolina. The state's leading varieties in 1957 were Jackson, Lee, CNS4, JEW 45 and Yelnanda.

North Carolina. The acreage planted to the different varieties would approximate these figures: Lee 60%, Ogden 20%, Jackson 10%, Roanoke 5%, and other varieties 5%. Under other varieties are small acreages of Dortchsoy, S-100, CNS, JEW 45 and Dorman. 1957 certified acres included Lee 4,735, Ogden 152, Jackson 105, and Roanoke 60.

Ogden is more important than the above figures would indicate, says George E. Spain, North Carolina agronomy extension specialist. He says much farm seed of Ogden is used, and certified seed of Ogden is brought into the state from Virginia and Tennessee.

Kentucky. Of 140,000 acres produced for beans in 1957, approximately 50% were of the Clark variety. Wabash occupied 12% to 15%, Perry 10%, Lincoln 7% to 10% and Ogden approximately 15%. Ogden

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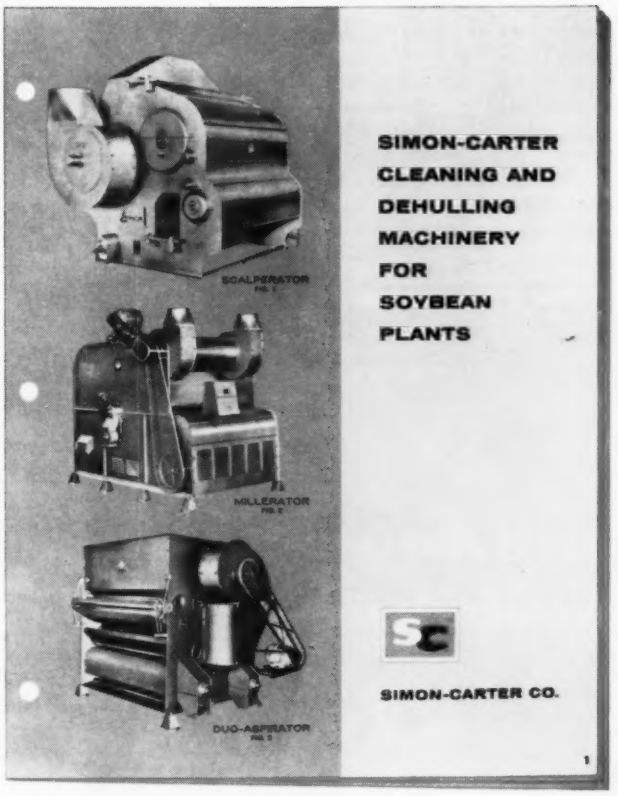

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is produced chiefly in the Mississippi Valley in the extreme western part of the state. Others are distributed well over the state. Report is by Orie Mullen, Kentucky Seed Improvement Association.

Georgia. Of 152,000 acres of soybeans produced in Georgia, variety distribution was as follows, according to Hugh A. Inglis, agronomist, Georgia Crop Improvement Association: Jackson 30,000, CNS 4 43,000, CNS 24 30,000, JEW 45 10,000, Lee 3,000,O-Too-Tan 12,000, Gatan 10,000, Brown Biloxi 5,000, Ogden 2,000, Roanoke 1,500, other 5,500.

Of the above acreage 122,000 acres were planted alone and 30,000 were interplanted with corn or other crops. A total of 100,000 acres was harvested for beans, and 52,000 cut for hay.

Alabama. Melvin M. Moorer, Alabama Crop Improvement Association, estimates the varieties and their percentages as follows: Ogden 45%, Jackson 30%, Lee 15%, others 10%. Ogden and Lee are used in all sections, Jackson mainly in central and south Alabama.

New Jersey. John L. Gerwig, assistant extension specialist, estimates the state's acreage as follows: Clark 25,000 acres, mostly in southern New Jersey; Lincoln 10,000, mostly in central; Hawkeye grown mostly in southern and central when beans are planted late; forage beans, no variety name, probably mostly Lincoln and Clark, 7,500, in north Jersey, mostly in combination with sorghum or sudan grass.

Ohio. William G. Foster, Ohio Seed Improvement Association, offers a calculated estimate of total state acreage devoted to each variety: Harosoy 40%, Hawkeye 25%, Lincoln 20%, Monroe 3%, Blackhawk 2%, and the remaining 10% divided between Clark, Adams, Chippewa, Manchu, Mandell and Bavender. He says Blackhawk is expected to increase slightly and the other varieties to remain rather stable until some new varieties are introduced.

Monroe and Blackhawk are largely restricted to the north central and northwestern portions of the state. Harosoy and Hawkeye are grown over the entire state with heavy concentration in the central and northwest section. Lincoln is used more in the central and southern portions but a large amount is grown in the northwest section as a full season bean.

Wisconsin. James H. Torrie, University of Wisconsin professor of agronomy, says Chippewa 35%, Blackhawk 20%, and Norchief 15% are the leading varieties. But a

rather large number of other varieties are also grown as follows: Flambeau 5%, Ottawa Mandarin 5%, Capital 5%, Grant 2%, Monroe 5%, Local Manchu 3% and Hawkeye 5%.

North Dakota. L. A. Jensen, extension agronomist, estimates the percentage of the total acreage occupied by each variety as follows: Capital 20%, Grant 20%, Norchief 20%, Comet 10%, Flambeau 10%, Acme 5%, Ottawa Mandarin 5%, others 10%.

Capital and Grant are grown primarily from Fargo south, Comet and Ottawa Mandarin mainly in the Fargo area, and the early variety Flambeau in the northern end of the Red River Valley or for late planting elsewhere. Soybeans are mainly grown in the eastern tier of counties.

Oklahoma. Ed Granstaff, Oklahoma Crop Improvement Association, estimates the percentage of Oklahoma acreage occupied by the different varieties: Dorman 30%, in east central; Ogden 30%, in south central and southeastern; Lee 15%, in south central and southeastern; S-100 10%, northeastern; Clark 5%, northeastern; and others 10%.

Kansas. Wayne L. Fowler, Kansas Crop Improvement Association, says for all practical purposes Clark is becoming the only variety of soybeans produced in Kansas, with an acreage of S-100 and Perry being grown in the southeast part of the state.

Virginia. S. F. Grubbs, Virginia Crop Improvement Association, reports the certified acreage of varieties in 1957: Ogden 1,982, Lee 1,890, Dorman 634, Early Woods Yellow 304, Clark 278, Jackson 65, Perry 30, Dortchsoy 31 20. Practically all production is in the Tidewater section and the Piedmont region.

Mississippi County, Ark. Nation's First in 1957

MISSISSIPPI County, Ark., in 1957 toppled Champaign County, Ill., from its long-held position as the nation's No. 1 soybean-producing county.

Mississippi County in 1957 produced 6,408,000 bushels compared with Champaign's 5,721,000 bushels, according to the U.S. Department of Agriculture's annual county-by-county report.

Though Illinois still has the nation's largest area of concentrated soybean production—perhaps it is the most concentrated in the world—Arkansas has been coming up fast. In 1956 the state's crop totaled 27.1 million bushels, in 1957 32.5 million, and in 1958 46.6 million, according to the November crop report.

Arkansas this past year ranked sixth in soybean production, behind Illinois, Iowa, Indiana, Minnesota and Missouri, in that order. In 1957 Arkansas had nine counties producing 1 or more million bushels each. These counties were all in districts 3 and 6, which between the two districts produced over 29 million of the state's 32.5-million-bushel crop.

The nation's 11 leading soybean producing counties, each of which produced over 3 million bushels in 1957, are in order of their production, which is shown in millions of bushels: Mississippi, Ark. 6.4; Champaign, Ill. 5.7; Iroquois, Ill. 4.8; Vermilion, Ill. 4.4; Sangamon, Ill. 4.2; Livingston, Ill. 3.9; Christian, Ill. 3.8; Pemiscot, Mo. 3.7; Macon, Ill. 3.3; Blue Earth, Minn. 3.1; and Webster, Iowa 3.

There were 137 counties in 14 of the nation's leading soybean states that produced 1 million bushels or more of soybeans in 1957, as follows: Illinois 46; Iowa and Minnesota 20 each; Indiana 14; Arkansas and Ohio 9 each; Missouri 7; Mississippi 4; South Carolina and Michigan 2 each; and North Dakota, Delaware, North Carolina and Alabama 1 each.

CROP REPORT

USDA Lowers December Estimate Slightly

SOYBEAN PRODUCTION in 1958 reached a record high of 574 million bushels, the fifth consecutive year in which soybeans have set a new production record, according to the U. S. Department of Agriculture's annual crop summary issued Dec. 17. USDA lowered its final estimate a little more than one-half million bushels from Nov. 1.

The current estimate is nearly one-fifth above the revised 1957 production of 484 million bushels and is almost double the 10-year average. The U. S. yield of 24.2 bushels per acre is also the highest of record, exceeding the previous high of 23.2 bushels harvested in 1957. The 10-year average yield is 20.3 bushels per acre.

Soybeans planted for all purposes in 1958 reached 25.1 million acres. This is 3 million acres above the previous record. Of this acreage, nearly 95% or 23.8 million acres were harvested for beans. The percentage cut for hay was down slightly from last year, continuing the downward trend that started at the beginning of World War II. The percentage for other purposes, which includes abandonment, amounted to only 3.3% of the planted acreage, also down slightly from last year.

The 1958 season was the most satisfactory for soybeans of any recent year.

Much of the growing season was rather cool and wet over large areas and plants made excellent growth although maturity was later than usual.

SOYBEANS FOR BEANS

Annual crop summary, December 1958, crop reporting board, AMS, USDA

	Acreage harvested[1]			Yield per acre			Production		
	Average 1947-56	1957	1958	Average 1947-56	1957	1958	Average 1947-56	1957	1958
	1,000 acres			Bushels			1,000 bushels		
N. Y.	6	6	6	16.0	18.0	17.0	97	108	102
N. J.	26	44	45	19.4	14.0	25.0	518	616	1,125
Pa.	23	17	15	17.6	13.0	22.0	398	221	330
Ohio	1,051	1,421	1,441	22.0	23.0	26.0	23,290	32,683	37,466
Ind.	1,737	2,174	2,205	22.3	24.5	26.5	38,865	53,263	58,432
Ill.	3,868	4,914	5,013	23.4	25.5	28.0	90,978	125,307	140,364
Mich.	112	236	265	20.0	22.0	23.0	2,278	5,192	6,095
Wis.	48	101	120	14.3	17.0	14.5	693	1,717	1,740
Minn.	1,416	2,549	3,082	18.4	21.5	17.5	26,839	54,804	53,935
Iowa	1,837	2,827	3,085	21.7	27.0	25.5	39,630	76,329	78,668
Mo.	1,420	1,719	2,132	18.0	21.5	26.0	25,211	36,958	55,432
N. Dak.	47	184	272	12.8	18.0	13.5	627	3,312	3,672
S. Dak.	105	186	259	14.4	16.5	11.5	1,462	3,069	2,978
Nebr.	90	142	206	19.4	27.0	30.0	1,582	3,834	6,180
Kans.	357	214	421	11.4	11.5	22.0	4,043	2,461	9,262
Del.	77	146	161	16.4	17.5	22.5	1,345	2,555	3,622
Md.	100	187	193	17.6	17.5	22.0	1,870	3,272	4,246
Va.	169	238	269	17.4	18.0	22.5	2,997	4,284	6,052
N. C.	294	441	444	16.4	20.0	23.0	4,894	8,820	10,212
S. C.	112	329	362	11.3	16.5	15.5	1,266	5,428	5,611
Ga.	36	100	90	10.6	14.0	12.5	410	1,400	1,125
Fla.	[2] 18	45	46	[2]18.9	23.0	25.0	[2] 347	1,035	1,150
Ky.	123	130	158	17.7	20.5	24.5	2,194	2,665	3,871
Tenn.	189	187	276	17.7	22.5	23.5	3,322	4,208	6,486
Ala.	78	122	132	19.1	20.0	22.5	1,488	2,440	2,970
Miss.	384	615	800	15.7	19.0	23.0	6,016	11,685	18,400
Ark.	738	1,383	2,026	16.9	23.5	24.5	12,253	32,500	49,637
La.	56	119	130	16.6	21.0	22.0	975	2,499	2,860
Okla.	38	30	45	10.7	17.0	22.5	410	510	1,012
Texas	3	20	53	[1]16.2	27.0	26.0	52	540	1,378
U. S.	14,557	20,826	23,752	20.3	23.2	24.2	296,294	483,715	574,413

[1] Equivalent solid acreage. (Acreage grown alone, with an allowance for acreage grown with other crops) [2] Short-time average.

SOYBEANS: ACRES HARVESTED, YIELD PER ACRE AND TOTAL YIELD, 1939-58

	Acres harvested	Yield per acre	Total yield
	1,000 acres	Bu.	1,000 bushels
1939	4,315	20.9	90,141
1940	4,807	16.2	78,045
1941	5,889	18.2	107,197
1942	9,894	19.0	187,524
1943	10,397	18.3	190,133
1944	10,245	18.8	192,121
1945	10,740	18.0	193,167
1946	9,932	20.5	203,395
1947	11,411	16.3	186,451
1948	10,682	21.3	227,217
1949	10,482	22.3	234,194
1950	13,807	21.7	299,249
1951	13,615	20.8	283,777
1952	14,435	20.7	298,839
1953	14,829	18.2	269,169
1954	17,047	20.0	341,075
1955	18,620	20.1	373,522
1956	20,642	21.8	449,446
1957	20,826	23.2	483,715
1958	23,752	24.2	574,413

Crop reporting board, AMS, USDA

JAPANESE-AMERICAN SOYBEAN INSTITUTE

Seek Suitable U.S. Food Varieties

By SHIZUKA HAYASHI

Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1, 1-Chome Yurakucho, Chiyoda-Ku, Tokyo, Japan

NAGANO PREFECTURE with about 320 miso manufacturers is the largest miso producing area in Japan. Its annual output is approximately 140,000 tons, more than one-fourth of the total Japanese production.

Nagano miso is popularly known as "Shinshu Miso." It is lighter in color than the miso produced in other areas. Manufacturers in this area have thought it would add to their prestige to tell customers that their miso was manufactured from soybeans produced domestically in Japan and from Chinese soybeans. Although they were obliged to use a small percentage of U. S. soybeans mixed with other beans due to the import allocation, they refrained from disclosing the fact. It was claimed that miso manufactured from U. S. soybeans sold at a lower price than miso made from other beans.

The biggest objections to U. S. soybeans were that they contained morning glory seeds, corn and other foreign material not found in beans of other origin. U. S. soybeans take much longer time in cooking to obtain the required softness. Due to the extra time required in steaming the color of the miso produced becomes darker. Further, the irregularity in size of the U. S. soybeans causes unevenness in softness when they are cooked. Broken beans are objectionable for this reason.

Above all, the "taste" of the soybeans after they are cooked is claimed to be unsatisfactory as compared with other beans, and this affects the sweetness or flavor of the miso produced. The taste is closely related to the natural characteristics of the beans and will have to be solved scientifically. The miso people have not attempted to solve this problem so far. Research on this point has not been urgent because until recently they have been able to get along well with domestic and Chinese soybeans.

But now situation has changed. Since the breakoff in trade between China and Japan last April Chinese beans are no longer coming into Japan. Processors of miso and tofu as well as other soybean products now have to depend to a larger extent on U. S. soybeans. Even the largest frozen (dried) tofu makers in the Nagano area are using U. S. soybeans. It is now urgent for these food processors to become familiar with and to deal seriously with U. S. soybeans.

SOYBEAN MEETING at Nagano City where the hope of finding a new U. S. soybean variety for Japanese food processing was discussed. Mr. Hayashi is speaking. At his far right is Mr. Tsukada of the Frozen Tofu Association, and on his immediate left is Mr. Aoki of the Nagano Miso Association.

These questions were discussed in a meeting held in Nagano City between the important miso manufacturers and the frozen-tofu people and the staff of the Japanese American Soybean Institute.

Such problems as foreign material, morning glory seeds, and broken beans can be solved technically rather easily. But the quality cannot.

A number of samples of different soybean varieties were shown to the processors at this meeting. They were surprised and gratified to learn that beans apparently suitable for miso and tofu manufacture are

grown and available in the United States. Technical experiments will be required to determine whether these soybeans will produce results similar to those of domestic or Chinese soybeans. But the processors were quite satisfied with their general appearance. They hoped that the two scientists now working on these problems at Peoria will solve them satisfactorily before long.

A few hundred tons of samples for experiments both by laboratories and processing plants will be necessary. It has been decided that a sizable quantity of each of the different varieties will be purchased through the Miso Association. Tests on an industrial basis will take a few months at least. The sample shipments will require experiments to determine which varieties are most suitable for miso and tofu making. *They hope to determine a few types that are suitable for these uses well in advance of the next planting season.*

A miso research laboratory primarily to solve the problems involved in manufacturing miso with U. S. soybeans is now under construction by the Nagano Miso Association with the support of the Nagano prefectural government. It is hoped that the studies at this laboratory may be closely tied in with the studies by the two Japanese scientists at the Peoria Laboratory.

When the writer visited a number of manufacturers in this district 2 years ago they were generally strongly dissatisfied with U. S. soybeans. Even if some did use a certain quantity of U. S. soybeans and with the feeling definitely changed in favor of them, I will emphasize the importance of not missing this opportunity to strive for the popularity of U. S. soybeans and the maintenance of the Japanese market for them for many years to come. Serious attention should be given to the various problems connected with their use.

CROWD waiting to enter U. S. agricultural exhibit at New Delhi fair.

SOYBEAN COUNCIL OF AMERICA, INC.

Good Reception of Soybean Exhibit at New Delhi Fair

THE SOYBEAN EXHIBIT of the Soybean Council at the U. S. solo fair in New Delhi which opened Dec. 10 is being accorded a "splendid reception" according to reports.

Council President Howard L. Roach and Ersel Walley of Fort Wayne, Ind., are in charge of the soybean exhibit at the New Delhi fair, which is sponsored by the U. S. Department of Commerce. Due to the favorable reception of the soy-

bean exhibit at New Delhi, the Council has asked for a repeat of the exhibit at a similar fair in Calcutta, which opens Mar. 10.

Many Indians are seeing soybeans and soybean products for the first time. An attractive display of foods using soy products in their manufacture, sparks many questions from visitors.

A modern, automatic donut machine demonstrates how delicious wheat flour, soy flour and other ingredients can be after being deep fried as donuts in soybean oil.

Foreign Agricultural Service, represented by Hamilton Cook, Washington, D. C., cooperating with the U. S. Department of Commerce, makes it possible for the American farmer to stand alongside American manufacturers in telling the American story and bidding for business from other nations.

Strayer Sees Good Market For U. S. Oils in Asia

GEO. M. STRAYER, executive director of the Soybean Council of America, Inc., returned to his desk at Hudson, Iowa, Dec. 17 after an 8-weeks' tour of southeast Asia convinced that substantial quantities of U. S. soybeans and soybean products can be sold in the area if the effort is made.

Strayer is convinced there is a vast untapped market that can be developed for U. S. fats and oils in the countries he visited, which include Hong Hong, Singapore, Malaya, Burma, India and Pakistan.

Strayer says India in spite of all efforts she can make to be self-sufficient in fats and oils is destined to become a major oil-deficient nation. The India oilseeds committee estimates the annual shortage of vegetable oils will run to 2.2 million tons by 1976. Consumption of oils is rapidly outrunning production in that part of the world. The committee expects the large increase in production of fat products to come in vanaspati, a vegetable oil ghee which is consumed in large quantities in that part of the world.

But Strayer points out that communist China is close to this market and aggressively cultivating it. The only way the United States can break in is by placing some on-the-spot salesmen of U. S. soybeans and soybean products in the area, he says. Sales of soybeans will be in small lots, but the potential number of sales is vast. Oil purchases will be in larger quantities.

People in southeast Asia know nothing about soybean oil, Strayer says, and readily accept rumors circulating about its poor quality. He thinks technical men should be sent over to show buyers how to use soybean oil and how to blend it with the peanut, cottonseed and other oils now in use there.

Strayer was one of a three-man team who surveyed the area during the fall. The others were E. M. Deck, Anderson, Clayton & Co., Dallas, Tex., and V. M. Hougen of USDA's Foreign Agricultural Service, Washington, D. C.

Council Will Undertake Central American Survey

A THREE-MAN team will begin a survey of Mexico and the Central American countries about Feb. 1 to determine market potentials for U. S. vegetable oilseeds and their products in the area. The survey will be sponsored jointly by the Soybean Council and USDA's Foreign Agricultural Service.

A similar survey was made under the sponsorship of the Council and FAS in Mexico and the Caribbean area last summer.

Hold Oil Seminars in Spain

By JAVIER DE SALAS
Director General for Spain, Edificio Espana, Madrid

DURING the month of November, two oil seminars organized by the Soybean Council of America and the Spanish Olive Oil Syndicate were held in Seville and Barcelona, the two most important Spanish towns from the viewpoint of the oil industry.

The meetings were held under the honorary presidency of Jose Navarro, national chief of the Olive Oil Syndicate, and under the auspices of the Comisaria for Supply and Transportation, the purchasing agency of the Spanish government.

On Nov. 18 the first meeting was held in Seville in the building of the Instituto de la Grasa, the most important institute in Spain for research on fats and oils. Dr. Edward M. James, consultant to the Soybean Council, gave a talk on, "U. S. Soybean Oil Types, Qualities and Trade Practices." The interest was so great that the question and answer period took more than 1½ hours.

Rafael Mata, chief of the trade group of the Spanish refiners, spoke on the refining capacity of Spain. The director of the Instituto de la Grasa, Juan Martinez Moreno, spoke on the subject of technical aid to the Spanish oil industry. All agencies of the Spanish government sent official representatives. The lecture room was packed to its total capacity.

The meeting in Barcelona started Nov. 25. It was held at the Instituto Catalan de San Isidro, traditional center of research and teaching. The Poultry Co-op of San Isidro and the Escuela de Oleicultura (School of Oil Culture) were joint sponsors of the meeting.

The attendance here was also very great, not only by people interested in oil, but by feed specialists and farmers. Dr. James had to answer questions for approximately the same time as in Seville. The interest of the Spanish groups in this type of meeting is demonstrated by the fact that the office of the Soybean Council in Spain has already been asked to hold similar seminars next year.

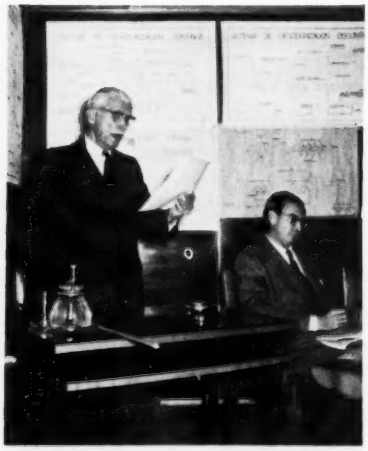
The U. S. Embassy in Spain was represented at Seville by Donald S. Hubbell, chief of the Food and Agriculture Division of ICA, and in Barcelona by Carl van Haeften, assistant chief of the Food and Agriculture Division of ICA. Both officials had to answer many questions about U. S. policy in the export of surplus agricultural commodities. Everybody present felt that many past misunderstandings were dispelled.

At the conclusion of the seminars, a small reception was held in the office of the Soybean Council in Madrid in honor of the officials of the Olive Oil Syndicate, who had so brilliantly helped in the success of the seminars. The national chief of the Olive Oil Syndicate and the president of the National Institute of Agricultural Research attended.

Import of Soybean Meal

As a direct consequence of the work of the Soybean Council in Spain, and especially through the recommendation made by the Poultry Co-op and mixed feed manufacturers attending the nutrition seminar in Reus, the Spanish government has officially requested the import of about $1.5 million worth of soybean meal.

The first purchase, of approximately 5,000 tons of 44% protein soybean oil meal, has already been made.



DR. JAMES speaks at Seville seminar. At his right is Mr. De Salas.

Operating Returns $30 to $50 in La.

NET OPERATING returns per acre of soybeans averaged from $30 to $50 an acre in Delta areas of Louisiana, according to a Louisiana State University study of farms in the area.

Labor and power requirements for producing soybeans for beans, also other inputs and costs and returns are presented in the tables.

A cost was not entered for insecticide because most farmers did not report the use of poison. However, it has been reported that dusting with DDT to control the velvetbean caterpillar and other insects has been necessary every year at Baton Rouge.

Necessary machinery under mechanized methods would involve an investment of about $1,200 in Louisiana. An additional $1,400 would be required for a power take-off combine. Other combines would require a larger investment.

Farmers estimated that this equipment would handle 80 to 90 acres of soybeans. The equipment could be used for other enterprises.

Data for Farm Planning in the Delta Cotton Areas of Louisiana. By Bill Bolton and Morris M. Lindsey. D.A.E. Circular No. 203. Louisiana Agricultural Experiment Station, Baton Rouge 3, La.

EXPECTED COSTS AND RETURNS PER ACRE FOR SOYBEANS WITH GOOD MANAGEMENT PRACTICES, MISSISSIPPI RIVER TERRACE AREA

Item	Unit	Quantity	Unit price	Amount
Cash operating costs				
Seed	bu.	1.0	$4.25	$ 4.25
Fertilizer (0-12-12)[1]	cwt.	4.0	2.00	8.00
Tractor operation	hr.	8.2	0.59	4.84
Total				$17.09
Labor (cash or non-cash)	hr.	9.7	0.50	4.85
Total operating costs				$21.94
Gross returns[1]				
Average year	bu.	25.0	$2.10	$52.50
Favorable year	bu.	35.0	2.10	$73.50
Unfavorable year	bu.	15.0	2.10	$31.50
Net operating returns[2]				
Average year				$30.56
Favorable year				$51.56
Unfavorable year				$ 9.56

[1] The 3-year average yield on the farms studied was only 12 bushels per acre. None of the farms used fertilizer. In tests conducted on Terrace soils at the Baton Rouge Station a 7-year average yield without fertilizer was 17.5 bushels per acre. The average yield with the use of an 0-36-48 fertilizer was 25.8 bushels, while the average yield with an 0-72-72 was 31.5 bushels. Yields at all levels of fertilization were slightly higher where lime was also used. [2] None of the farms reported the use of insecticide. Where it is assumed that insecticide will be needed to maintain average yields, costs should be increased and net returns decreased by approximately $2.00 per acre.

USUAL OPERATIONS AND LABOR AND POWER REQUIREMENTS PER ACRE FOR SOYBEAN PRODUCTION, DELTA COTTON AREAS OF LOUISIANA[1]

Operation	Times over	Hours per acre Man	Power
Disk land	2	1.00	1.00
Bed row	1	.55	0.55
Disk row	1	.50	0.50
Drag, harrow	1	.48	0.48
Plant	1	.70	0.70
Cultivate	6	3.00	3.00
Combine	1	1.80	0.90
Haul	1	1.20	0.60
Total [2]		9.23	7.73

[1] Based on the use of two-row tractor equipment. [2] In the terrace areas 0.5 hour should be added for mixed fertilizer application.

EXPECTED COSTS AND RETURNS PER ACRE FOR SOYBEANS WITH GOOD MANAGEMENT PRACTICES, MISSISSIPPI AND RED RIVER ALLUVIAL AREAS

Item	Unit	Quantity	Unit price	Amount
Cash operating costs				
Seed	bu.	1.0	$4.25	$ 4.25
Tractor operation	hr.	7.7	0.59	4.54
Total				$ 8.79
Labor (cash or non-cash)	hr.	9.2	0.50	4.60
Total operating cost[1]				$13.39
Gross returns[2]				
Average year	bu.	30	$2.10	$63.00
Favorable year	bu.	40	2.10	$84.00
Unfavorable year	bu.	20	2.10	$42.00
Net operating returns[1]				
Average year				$49.61
Favorable year				$70.61
Unfavorable year				$28.61

[1] While it was not a usual practice on the farms studied, poison (DDT) was used on a number of farms. Where it is necessary to poison, approximately $2.00 ($1.35 for poison and $0.65 for application) should be added to costs and deducted from net returns. [2] The 2-year average yields on the farms studied was slightly more than 27 bushels per acre.

Maturity Date Directly Related to Bean Yield

THE LENGTH of time that a soybean variety takes to mature is directly proportional to its yield, according to studies on Taiwan.

Sixty varieties of Chinese, Japanese and American origin were planted at 10 different dates in 1954 to 1955 in order to study their most suitable times of planting and their yields.

Some of the varieties gave better results when planted in the spring, others in summer or fall. But some varieties were suitable for planting year around.

With the exception of a few varieties, February planted varieties with growing time over 50 days made higher yields than varieties with less than 50 days growing time. July planted varieties with over 45 days' growing time yielded more than those with less than 40 days' growing time.

Varieties planted in July made higher yields than those planted in February.

Journal of Agriculture and Forestry, December 1956, pages 16-38. In Japanese language with English summary.

Root Rot of Increasing Importance in Ohio

ROOT ROT of soybeans promises to become more of a problem each year in Ohio. Once the fungus that causes the rot gets a foothold in a field, there is not much that can be done to eliminate it. The Ohio Experiment Station has demonstrated that root rot can survive for long periods in the soil.

Fortunately, some varieties are resistant to this disease. Only two now recommended in Ohio—Monroe and Blackhawk — are highly resistant. The popular variety Harosoy is especially susceptible. Hawkeye and Lincoln are also susceptible but are not damaged as badly as Harosoy.

Dr. P. E. Smith of the University of Ohio department of agronomy is developing new varieties of soybeans with the yield potential of Harosoy but resistant to root rot.

Root Rot. By A. F. Schmitthenner, Ohio Farm and Home Research, July-August 1958. Ohio Agricultural Experiment Station, Wooster, Ohio.

Mrs. W. J. Morse Passes on Dec. 23

MRS. WILLIAM J. MORSE, wife of the man who is known as the founder of the soybean crop and industry in the United States, died in her sleep at their home in Eastchester, N. Y., the morning of Dec. 23. She underwent a major operation Nov. 3 but was thought to be making a good recovery.

Mr. Morse retired in 1949 from the U. S. Department of Agriculture where he headed soybean development work. He was active in the Department 42 years.

Mrs. Morse took a keen interest in his work, often accompanying him to the experimental plots and helping with his records. In the late 20s she accompanied him to the Orient where they collected many of the soybean varieties that have formed the foundation for the present U. S. soybean crop. She helped to write up the notes on the many hundreds of soybean varieties and the soy products that were brought back to this country. She became interested in soy products in the Orient and over the years tried out many soy foods in her own kitchen.

NEW PRODUCTS and SERVICES

CONVEYOR. "Hy-Flo" Conveyor, made by Screw Conveyor Corp., consists of a series of flights carried by a chain fitted with attachments, all enclosed and operating within a conventional screw conveyor trough. It will handle a variety of abrasive or nonabrasive materials, needs no separate return strands, is self-cleaning, compact, fast and requires a small amount of power to operate.

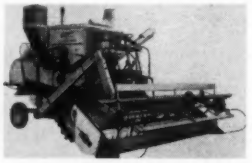
Grain, feed, soybeans and pellets are typical of the free-flowing materials that may be handled.

A complete conveyor comprises a standard head section fitted with a shaft, bearings and take-up. The intermediate sections are standard screw conveyor troughing, fitted together in the regular manner. The conveyor is completely enclosed with patented "Tite-Seal" cover and clamps making it dust-tight.

Discharge from trough may be at any point desired. Any type of drive can be used convenient to the customer. If slide gates are required they may be flat, curved, hand or rack and pinion operated. Receiving spouts can be located to suit conditions.

For further information write Soybean Digest 1c, Hudson, Iowa.

COMBINE. Production is now under way at the Allis-Chalmers Independence, Mo., works on new Gleaner-Baldwin self-propelled combines for 1959. The Gleaner models A and R have many new features that include an all new quick-detachable header.



The seat on the 1959 models has been redesigned for added operator comfort. Foam rubber padding is used in both back rest and seat. The seat folds out of the way for standup operation.

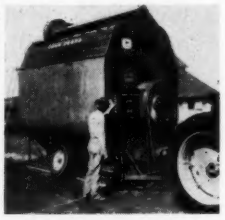
Sealed beam headlights are mounted on the triangular front panel as standard equipment. An illuminated tail light is located near the rear of the service deck ladder on the left side of the machine.

The new A and R models are now available from the factory with optional V-belt or chain driven cylinders. A 12-volt ignition system for gasoline, diesel and LP-gas engines is now standard equipment.

For further information write Soybean Digest 1a, Hudson, Iowa.

DRIER. The 458 Grain Dryer, first drier to be made by a full line farm equipment manufacturer, is announced by John Deere, Moline, Ill.

This is a portable, batch-type blending drier in the 400-bushel class, specially designed for safe, simple operation. Its variable blending principle represents an effective new approach to thorough, even drying.



The John Deere 458 Dryer is designed to remove excess moisture from shelled corn and other grain or soybeans. The unit is LP-gas fired, and PTO-driven by a John Deere "520" or other tractor of three-plow power or more.

Basically, the 458 Dryer is two perforated chambers, one inside the other. Grain is held between them, in a tubular layer about 18 inches thick. The burner and fan in the inside chamber provide heated air which blows outward through the perforated walls and the layer of grain.

The drier has a drawbar and retractable wheels for transporting. It has a folding auger hopper for loading grain from trucks or wagons, and a discharge spout for unloading.

For further information write Soybean Digest 1b, Hudson, Iowa.

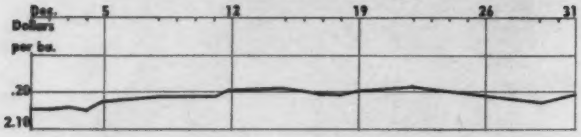
HAMMERMILL. A new descriptive catalog sheet has been issued by Prater Pulverizer Co. on the Prater Challenger Hammermill. This briefly describes the features and advantages of the two models now available: the Dual-Power Challenger and the Single Power Challenger Hammermill with balanced fan.

The special features of these mills are: all-steel, electrically fabricated throughout; heavy duty sealed-for-life bearings; automatic crusher-feeder for shucky ear corn; permanent magnetic separator; oversized rotor shaft; extra large screen area; automatic 6-second screen changer from floor work; and large, heavy duty fan assembly of efficient design for conveying large volumes of materials the desired heights and distances.

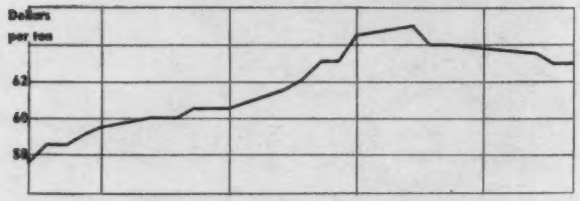
Dual-Power Challenger has separate motor connected direct to fan and is available in sizes up to 175 hp.

For further information write Soybean Digest 1d, Hudson, Iowa.

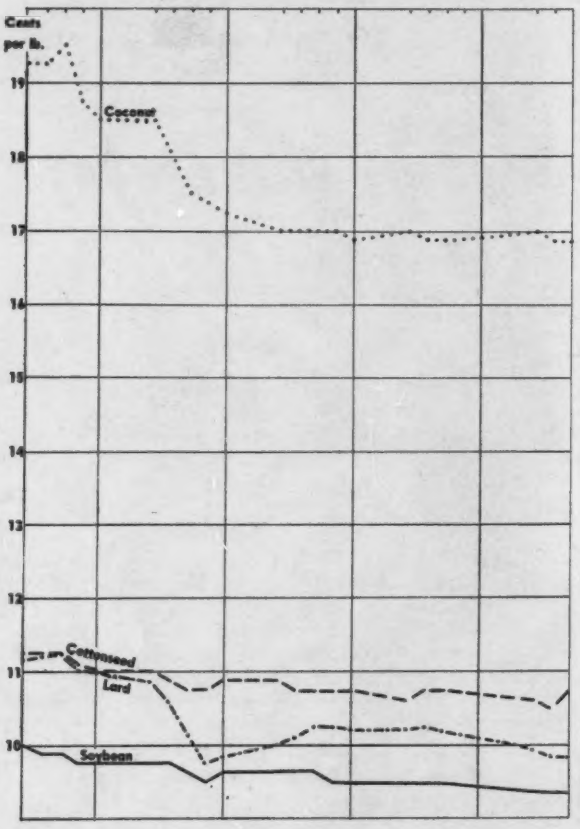
DAILY MARKET PRICES
No. 1 Cash Soybeans, Chicago



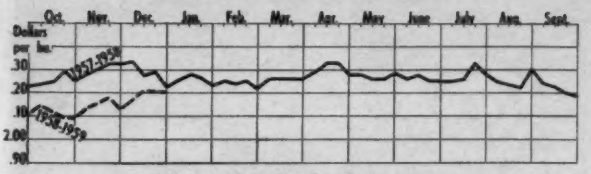
Bulk Soybean Oil Meal, Decatur



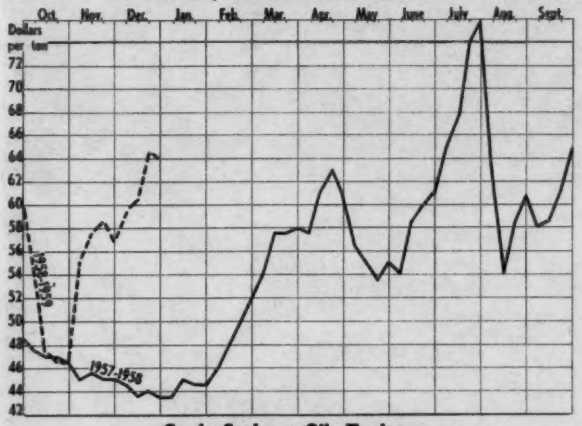
Crude Vegetable Oils and Lard



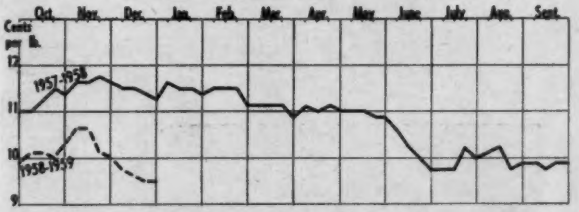
TRENDS AT A GLANCE (Weekly Close)
No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Soybean Oil, Tankcars



December Markets

CASH SOYBEANS made a small net advance during December and soybean meal underwent another sharp advance to new season's highs. Soybean oil drifted lower and lost ⅝¢ during December, reaching the lowest point in some years.

Country marketings of beans were light and cash beans were increasingly difficult to buy. Processing operations continued at a rapid pace—the total of October and November ran 10 million bushels ahead of a year earlier. Processors were good bidders as they attempted to maintain their soybean stocks.

Snow and severe cold in the Midwest in mid-December stepped up the demand for livestock and poultry feed sharply. There was a brisk demand for meal and a growing shortage of the spot product was reported.

Impoundings were heavy through November, running well above a year ago.

Traders were reported disappointed with export business. Inspections of soybeans for export for the 1958-59 marketing year to date were running somewhat below a year ago.

Bearish influences were USDA's dropping of carrying charges on Commodity Credit Corp. stocks of 1957-crop soybeans and the temporary termination of the government's cottonseed oil buying program.

BYPRODUCTS. The price of soybean fatty acids remained at 15¼¢ per pound during December. Acid soybean soap stock remained at 4⅛¢ and raw soybean soap stock at 1⅜¢ per pound.

1957 AND 1958 SOYBEAN CROPS

	1958	1957
Soybeans crushed Oct. 1-Nov. 30 ..	66,933,133.2 bu.	57,253,322.7 bu.
Total soybeans under price support as of Nov. 30	67,031,581 bu.	41,104,072 bu.*
Total soybeans inspected for overseas shipment and lake shipments to Canada Oct. 1-Dec. 26 ..	31,941,211 bu.	34,062,842 bu.

"You bet we're proud of our farm"

"We like our way of life, too, because it's been a good way and a useful one.

"At least we've tried to make it so.

"When you work with something and watch it grow because of the care you're taking with it, it's almost like you're creating something . . . a wonderful sort of a feeling to have.

"Sure, we've had to work hard. Our family has lived on this land for 46 years now, and it hasn't always been easy. There've been drouth years, floods, insects—sometimes almost enough to make us wonder if it's all worthwhile.

"But it *is* worth it!

"We've stuck to farming, and the land has been good to us.

"Naturally, we are concerned about what our youngsters will do when they grow up. I guess all parents feel that way.

"But I know one thing—we're going to let our children make up their own minds. Whatever they do, we know the training they've gotten here will fit them for any number of jobs. (Can't help but hope, though, that they'll decide to stay with what they know best—farming.) Just look at the opportunity ahead.

"We've read all about how this country's population is booming so much, and how much more it's supposed to grow in just a few years.

"But when a country grows—and a world for that matter—people need more of everything. And the things we produce here on the farm will be the key to a whole lot of that growth.

"Sure, it's going to mean that farmers will have to produce more. And we'll have to be *better* farmers to meet the challenge. But take your 4H Clubs, FFA, and the advanced programs being offered by our ag colleges. Why, our youngsters today are learning things that were almost beyond the imagination when I was a boy.

"Yes, from here the future looks good . . . good enough to make us mighty thankful we're a *farm* family."

* * * * *

We at Cargill agree. There *is* going to be an increasing demand for farm products in the years to come. And the farmer is going to become an increasingly vital person to our economy.

That's a big responsibility this family is facing right now—the responsibility of helping provide all the crops our country and the world are going to require in future years. Just think, a predicted 220 million persons in the United States by 1975—and 3½ billion in the world by 1999!

But we firmly believe tomorrow's farmers are equal to the job, and then some. Cargill has worked with farmers and their families for more than 93 years now. (Our business is Creative Processing—finding ways to change raw farm crops into finished products people will need and buy.) That's why from our position as Number 2 man on the farmer-processor team, we can vouch for the kind of stock from which farm folks are made.

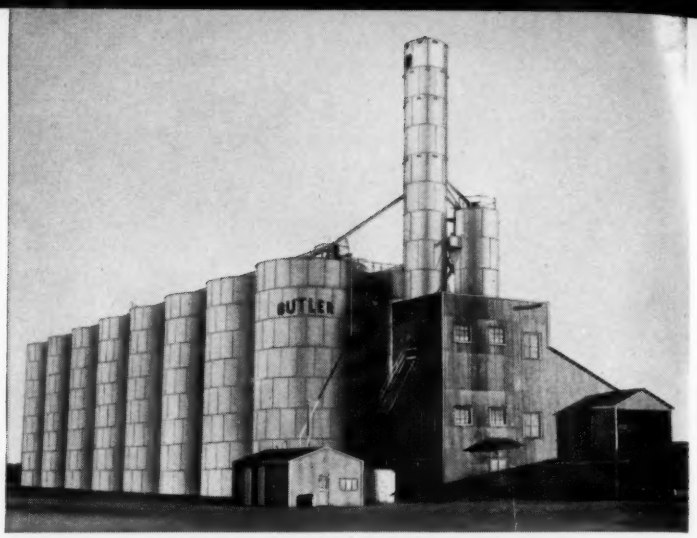
These are rugged, honest, loyal, hard-working and warm-hearted people. They're a big part of our own future at Cargill.

Cargill
CREATIVE PROCESSING

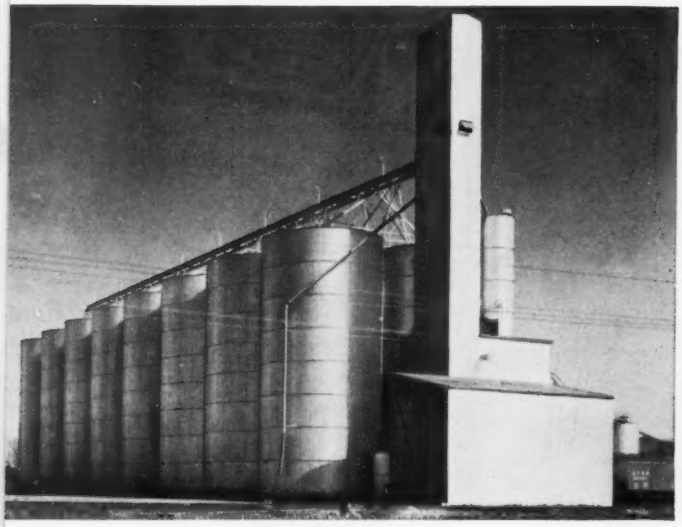
93 Years of
Creative Processing
of Farm Products

CARGILL

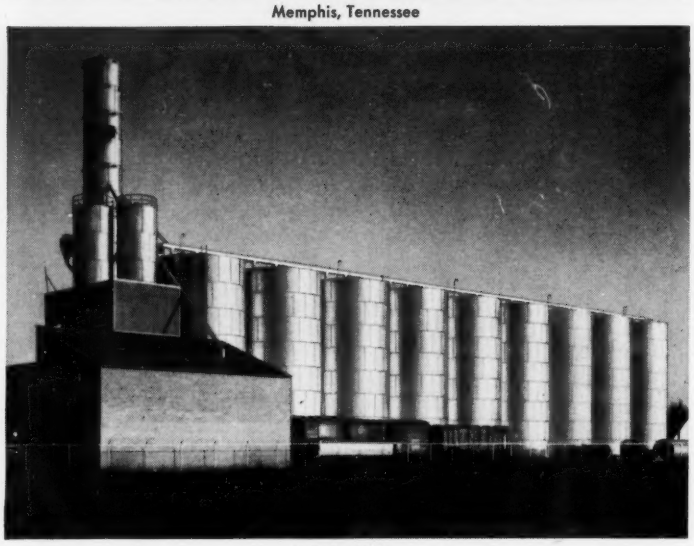
STORING DEHYDRATED ALFALFA IS DIFFERENT...



Memphis, Tennessee



Garden City, Kansas



Toledo, Ohio

Butler solves special storage requirements at three new plants for National Alfalfa

Ordinary storage won't do for alfalfa pellets. To prevent the loss of Vitamin A and protein in dehydrated alfalfa, the pellets must be stored in an inert gas atmosphere. This means the storage structure must not only protect the alfalfa from weather, moisture and pests, but also must be so tightly constructed that it can maintain gas under pressure.

Butler bolted steel tanks have solved this problem to the complete satisfaction of National Alfalfa Dehydrating and Milling Company. After Butler built the first dehydrated alfalfa plant for National in Garden City, Kansas, the company was so pleased with the plant's tight construction and economy that Butler was asked to build two almost exact duplicates—one in Memphis, Tenn. and the other in Toledo, Ohio.

Perhaps you, too, can benefit from Butler's unequalled experience in storage facilities for dehydrated alfalfa—and from the weather-tight safety Butler builds into every tank. Next time you need storage for grain, feed or ingredients, profit from Butler's quality and localized construction service. Contact the Butler contractor nearest you. He's listed on the opposite page.

For prompt reply, address the office nearest you

BUTLER STEEL PRODUCTS

BUTLER MANUFACTURING COMPANY

Dept. 461, P. O. Box 7027, 1020 East 63rd Street, Kansas City 13, Mo.
961 Sixth Avenue, S. E., Minneapolis 14, Minnesota
931 Avenue W, Ensley, Birmingham 8, Alabama
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Manufacturers of Farm Equipment • Buildings • Oil Equipment • Dry Cleaners Equipment • Outdoor Advertising Equipment • Custom Fabrication
Factories at Kansas City, Mo. • Minneapolis, Minn. • Galesburg, Ill. • Richmond, Calif. • Birmingham, Ala. • Houston, Texas • Burlington, Ontario, Canada

W. L. Burlison Is Gone

DR. W. L. BURLISON, professor of agronomy, emeritus, at the University of Illinois and one of the key figures in the development of the soybean crop and industry in the United States, died peacefully in his sleep at his home at Urbana, Ill., Dec. 25. He was 76.

Dr. Burlison was head of the department of agronomy at the University of Illinois from 1920 until his retirement in 1951. He saw the crop develop from a few bushels to half a billion bushels annually. It was in no small part due to Burlison's leadership that Illinois has paced the nation in soybean production for over 30 years and at times has produced over half the crop.

Said Harold D. Guither, assistant extension editor at the University of Illinois, in the Soybean Digest in 1957, "A vigorous research and extension program covering more than 35 years is one of the major reasons why Illinois today is the top soybean state." Mr. Guither noted Dr. Burlison's leadership in this work.

Dr. Burlison was one of the founders of both the American Soybean Association and the National Soybean Processors Association. He served both as president and secretary of ASA. He was a longtime counselor to both Associations and helped to promote friendly relationships between the two groups.

He was an honorary life member of both Associations. He was one of the first two men to be so honored by ASA, in 1946, the other being W. J. Morse, who pioneered the soybean work in the U. S. Department of Agriculture.

When the American Soybean Association celebrated its 25th anniversary with its annual convention at the University of Illinois in 1945, Dr. Burlison was the key man in planning that program and made it a high point in ASA history.

His vision and foresight resulted in the establishment of the U. S. Soybean Laboratory at Urbana. This later became the U. S. Regional Soybean Laboratory at Urbana, where the soybean breeding work for 12 Midwest states is directed, and the Northern Regional Research Laboratory at Peoria, where soybean industrial and foods work is centered.

Dr. Burlison was born in 1882 in Harrison, Ark. He attended country school in Oklahoma. He received his bachelor of science degree at Oklahoma A & M College in 1905, and his Master of Science and Ph. D. at the University of Illinois in 1908 and 1915. He was the author of a book entitled, "Farm Crop Projects," and author or co-author of 30 bulletins, 25 circulars and at least 65 scientific and popular articles. He was a member of and active in many agricultural, scientific, civic and religious organizations for many years.

Dr. Burlison is survived by Mrs. Burlison, who attended many soybean meetings with her husband, two daughters and two sons.

GRITS and FLAKES . . . *from the World of Soy*

Announce Retirement of Bullis of General Mills

Harry A. Bullis has resigned as chairman of the board of **General Mills, Inc.,** Minneapolis, and has been succeeded by Gerald S. Kennedy, effective Jan. 1. He will continue as a member of the board of directors and of the executive committee.

Harry A. Bullis

Mr. Bullis began with Washburn Crosby Co., a predecessor of General Mills, in 1919. He has served as secretary, comptroller, vice president and executive vice president, and as chairman of the board since 1948.

Mr. Kennedy, a member of the board of directors since 1948, was named executive vice president of the company last September.

General Mills has long been active in soybean processing and commercial feeds. It operates soybean processing plants at Belmond, Iowa, and Rossford, Ohio.

Two Appraisal Firms Have Consolidated

Patchin Appraisals, Inc., 5805 Excelsior Blvd., Minneapolis, Minn., announces consolidation with the Universal Appraisal Co., Inc., of Minneapolis.

Universal Appraisal Co., Inc., has been making industrial and commercial appraisals in the upper Midwest for the last 21 years. Don S. Stebbins, president, has joined Patchin Appraisals, Inc., as a vice president.

All clients of the Universal Appraisal Co., Inc., will continue to be served by Patchin Appraisals, Inc., with the same high-grade service as furnished by Mr. Stebbins.

Patchin Appraisals, Inc., is the only fully staffed appraisal organization that is locally owned and independently operated. Organized 6 years ago by George Patchin, president, they are currently engaged in making valuation of industrial and commercial property in 36 states.

Joins Overley & Withers Broker Firm at Memphis

William M. Holt has joined the firm of **Overley & Withers,** 4711 Poplar Ave., Memphis, Tenn., cash brokers in vegetable oils and meals, grains and feed ingredients.

A native Memphian, Mr. Holt was associated with Memphis Cotton Oil Mill for 10 years before leaving Memphis in 1957 to take a position with the Fort Smith Cotton Oil Co. Long active in feed circles, he is a past secretary of the Memphis Feed & Grain Club.

William M. Holt

K. L. Overley and J. W. Withers organized the brokerage operation last summer, and the addition of Mr. Holt to the firm will round out its coverage of the cottonseed and soybean products industries.

Cargill Building Big Export Elevator

Construction of a giant export grain elevator at Baie Comeau, Que., on the ocean end of the St. Lawrence Seaway, has begun, according to announcement by A. C. Greenman, vice president of **Cargill Grain Co., Ltd.,** builder of the world shipping installation.

The elevator will have a capacity of from 10 to 15 million bushels, with plans by Cargill to expand it to become one of the most important grain storage and shipping units in the world. Initial costs will be in excess of $5 million.

The installation, to be completed next year following the opening of the St. Lawrence Seaway, will coordinate Canadian-U. S. grain exports with world shipping of aluminum, iron ore, newsprint and other products.

The elevator's location at the Atlantic end of the St. Lawrence will enable Midwestern U. S. grain and Canadian prairie-province grain to be stockpiled for export even during months when the Seaway is closed by ice, Greenman said.

Chicago Dinner Honors McMillen

DALE W. McMILLEN, founder of Central Soya Co., Inc., and McMillen Feed Mills at Fort Wayne, Ind., and Frederick L. Hove, president of Purdue University, at the 44th annual dinner of the Indiana Society of Chicago at the Conrad Hilton hotel Dec. 6. A plaque for "distinguished service to agriculture, industry, and his fellow men" was presented to Mr. McMillen. Dr. Hove made the presentation.

Ralston Purina Names Some Plant Managers

David L. Grant, vice president of the **Ralston Purina Co.,** has announced that the following have been named managers of the soybean plants recently acquired from the Buckeye Cellulose Corp.

W. L. Golden will be manager of the Louisville, Ky., plant; A. I. Gleason will be manager of the Memphis, Tenn., plant; Emel Golden will be manager of the New Madrid, Mo., plant; and J. T. Wright will be manager of the Raleigh, N. C., plant.

W. L. Golden and Gleason are being transferred from Purina's Bloomington, Ill., and Iowa Falls, Iowa, plants to their new positions. Emel Golden and Wright were formerly with the Buckeye Cellulose Corp. at the New Madrid and Raleigh plants.

At the same time Mr. Grant appointed the following as superintendents: Jack Gardner, superintendent of the Louisville plant; L. E. Pedrick, superintendent of the Mem-

phis plant; J. F. Moody, superintendent of the Raleigh plant; and J. W. Anderson, superintendent of the New Madrid plant. Anderson is being transferred from the Decatur, Ill., plant.

The appointment of Everett E. Bierman, Washington, D. C., to the newly-created position of press relations manager, effective Feb. 1, was announced by **Central Soya Co., Inc.** He has been information officer for the National 4-H Club Foundation in Washington, D. C.

A. Mason DuPre, Jr., has been named assistant to the administrator of the **Agricultural Research Service, USDA,** succeeding Walter M. Scott, who is now directing USDA's P. L. 480 research program in Europe and the Near East. Mr. DuPre, who has served as special assistant to the director and assistant director of the Southern Utilization Research and Development Division, New Orleans, has assumed his new duties in Washington, D. C.

John A. Bartlett, senior vice president of **American Mineral Spirits Co.,** Chicago, Ill., was presented with an antique silver tray and diamond service pin by Allin W. Vallentyne, chairman, at a dinner commemorating his 25th anniversary with the firm. He started with Amsco's refinery at Miranda City, Tex., 25 years ago.

Archer - Daniels - Midland Co.'s formula feed manufacturing operations and feed dealer organization have been expanded through leasing of the feed production facilities of Ragland Mills, Inc., at Goodman, Mo. Production will be devoted exclusively to Archer Booster Feeds. A complete line of poultry, turkey, dairy and beef cattle and hog feeds and concentrates will be produced.

General Mills has purchased a half interest in the Nebraska safflower processing plant of the Pacific Vegetable Oil Corp. The plant is located at Sidney, Nebr. The move continues the cooperative safflower development venture begun by the two companies in the fall of 1957.

Jack Rosenberger has been named manager of the Memphis, Tenn., plant of **Central Soya Co., Inc.,** Fort Wayne, Ind. He succeeds Tom Marlow who has become senior engineer in the technical department. Mr. Rosenberger has been production engineer at Decatur, Ind., since 1956.

Eugene M. Brandenburg has been named Wisconsin territory manager in the field sales organization for "Staley's" feeds. The promotion was announced by Lloyd A. Winslow, formula feed department manager of the **A. E. Staley Manufacturing Co.,** Decatur, Ill.

David L. Grant, manufacturing vice president of the **Ralston Purina Co.,** has announced the transfers of mill managers at Purina branch plants at Louisville, Ky.; Muskogee, Okla.; and Wilson, N. C. F. W. Kessler, who is now manager at Louisville, transfers to Wilson, N. C., to succeed L. W. Ledbetter, Jr., who is being transferred to the company's general buying department in St. Louis. H. S. Farmer, now manager at Muskogee, Okla., becomes manager at Louisville. D. R. Mauery, now credit manager at the company's Shreveport, La., plant, transfers to Muskogee as manager.

Andrew M. Duncombe has been promoted to assistant to the director of public relations of **Central Soya Co.** He joined Central Soya in 1952 and was named public relations editor in 1957.

WASHINGTON DIGEST

Price Support of $1.95 Probable

By PORTER M. HEDGE
Washington Correspondent for The Soybean Digest

THIS IS a period in which budget control is dominating policies of the Department of Agriculture. This is particularly true of operations that might add to budget costs during the present fiscal year or require higher budget estimates for the 1959-60 fiscal year.

Leaders on the Hill who have recently talked with the President say the budget is one of the things uppermost in his mind. Original estimates of Department of Agriculture costs of $5 billion already have been increased officially to $6.9 billion for the present fiscal year. The latest estimate discussed at the White House is $7.5 billion for the current year.

This is background for explaining why no program has been announced for movement of the cottonseed oil taken in price support purchase operations last fall. The Budget Bureau is insisting that the Department of Agriculture sit on the oil for at least the time being—carry it in inventory rather than move it out in donation programs as authorized by Congress last summer.

Officials estimate they will take 183 million pounds of cottonseed oil in price support purchases. This represents about 12% of the estimated cottonseed oil production from the 1958 crush. It is less costly for the immediate future to carry the oil in CCC stocks than to move it into donation programs.

One group in USDA wants to go ahead and move the oil out as soon as possible, even suggesting to congressional leaders that the provision in Public Law 480 making it optional with the Secretary of Agriculture to move such oil into donation programs be made mandatory. A move to do this may come up later this winter.

In the meantime, another group in USDA is proposing that oilseeds—both soybeans and flaxseed—be made available under the P. L. 480 program. This would permit sale of soybeans for foreign currencies and crushing overseas.

There had been no decision one way or the other up to Christmas season.

Price Support

Price support for soybeans produced in 1959 is expected to be not more than 65% of parity, down 14¢ a bushel from the current year support level.

The 65% of parity rate has been discussed in USDA as a probable level. This is in line with support for cottonseed, and the level for corn produced next year.

Soybean parity was $3.07 in November. It's expected to fall around $3 or a little lower in January. Based on the estimate of about $2.97 parity for beans in January, 65% support would be $1.95 a bushel against $2.09 this year.

Farm prices for soybeans averaged $1.91 a bushel during October and November, reflecting the large supplies. This is the lowest level for the period in 15 years. For the 1958 season USDA estimates the average farm price at around $1.97 a bushel.

Based on the final 1958 crop estimate of 574.4 million bushels, the 1958-59 supply is now placed at 596 million counting carryover. The soybean crush is based primarily on estimates of the need for meal. The official USDA estimate still stands at 375 million bushels, roughly 20 million more than last season.

CCC policy on movement of oil could have an effect on actual crush. Processing 375 million bushels would produce more than enough oil for domestic needs plus the estimate of exports, unless the takeover of cottonseed oil is moved as originally indicated.

USDA figures soybean oil prices will average a little lower during the season this year than last, while meal prices are more stable. Meal is expected to be a little higher this winter than last year, but not likely to advance in price later in the season as it did a year ago.

Soybean exports again depend on policies not fully determined. A big lift to exports would be given if soybeans are put on the 480 list, though there is no sure indication at the present time this will be done.

Edible oil shipments got a shot in the arm with announcement that around 75 million pounds of soybean or cottonseed oil would be shipped to Yugoslavia under the P. L. 480 program.

The export sale was more than double the estimate of oil shipments that would go to Yugoslavia made earlier in the year.

CCC Sales Policy

Here is the offical sales policy for soybeans taken over by USDA in price support operations on the 1958 crop to be in effect during the June 1-Oct. 1 period next year:

"Any 1958-crop soybeans taken

over after the May 31, 1959, maturity date for price support loans and purchase agreements will be priced at the higher of the domestic market, or the 1958 price support loan rate for grade No. 2 soybeans at point of production plus 5¢ per bushel, plus 1½¢ per bushel carrying charges per month or fraction of a month, beginning June 1, 1959, until Oct. 1, 1959.

"An appraisal of the soybean situation will be made about Oct. 1, 1959, and further announcement will be made as to whether the program will be continued, modified, or terminated.

"CCC-owned 1957-crop soybeans will be sold for domestic crushing or for export at the higher of the domestic market or the 1957 crop loan rate for grade No. 2 soybeans at point of production plus 5¢ per bushel 'quality adjustment factor' as announced May 22. The actual sales price for each lot will reflect market premiums and discounts for quality factors such as moisture, damage and foreign material. Carrying charges which have been included in the soybean sales price are not being included in the December pricing.

"The 1957-crop soybeans will be sold in store with all storage and handling charges paid to date of purchase. The minimum sales price for soybeans that have been moved by CCC from points of production to subterminal or terminal storage locations will be the higher of (1) the market, or (2) the average basic loan rate in store at points of production plus the 5¢-per-bushel factor, and also plus average freight and uniform grain storage agreement in-elevation charges at subterminal or terminal storage point.

"The pricing for 1957-crop soybeans in the CCC inventory will apply to dollar sales for domestic crushing or export, barter transactions, and sales under the CCC credit sales program.

"The pricing of any 1957-crop soybeans owned by CCC on June 1, 1959, will be the same as for 1958-crop soybeans."

Expansion Program By Iowa Processor

AN EXPANSION program to increase the capacity of the Mason City plant of the North Iowa Cooperative Processing Association was approved by the stockholders at the annual meeting Dec. 8. The expansion, which will cost $225,000, will increase the daily processing capacity from 9,000 to 13,000 bushels of soybeans.

Manager Glenn Pogeler reported the cooperative had added during the year a 350,000-bushel concrete elevator to bring the total storage capacity to 700,000 bushels and a 500,000-gallon soybean storage tank which triples the oil storage capacity. Cost of the 1958 improvements was $200,000.

Earl M. Dean, Mason City, was reelected president; and Al K. Carstens, Burchinal, secretary. R. T. Nelson, Northwood, was elected vice president, succeeding Chas. F. Brooker.

Self Feed Beef Cattle With Protein and Salt

WITH SOME types of wintering rations for beef cows, it is often hard to feed protein supplement in the small amounts that are required. Cattle researcher, George Cmarik, Dixon Springs Experiment Station, University of Illinois, says to self-feed it—but with salt. George suggests mixing 80 pounds of soybean meal with 20 pounds of salt. After several days, consumption can be measured and the salt level increased or decreased to provide the desired protein consumption.

– MARKET STREET –

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10c per word per issue. Minimum insertion $2.00.

FOR SALE — FORDS PORTABLE feed grinder with mixers. Have one exceptionally good used outfit. H. L. Myers, Route No. 3, Alliance, Ohio. Phone TA3-7209.

STEEL GRAIN BINS—SOME 3,300, 4,400, 6,000, 7,000, 8,000 and 9,000-bushel capacities available at attractive prices. Midwest Steel Products Co., 121B Railway Exchange Bldg., Kansas City 6, Mo.

WANTED: FLAKING AND CRACKING rolls, meal coolers and driers and rollermills. Soybean Digest, Box 319-J, Hudson, Iowa.

FOR SALE—ANDERSON Expellers and French screw-presses, cookers, driers, 5-high, 48-inch crushing rolls, 36-inch attrition mills, sewing machines, hammermills, cracking rolls, filter presses. Ray L. Jones, 1923 Hayselton Drive, Jefferson City, Mo.

COMPLETE HAMMERMILL—ONE complete Jay Bee 26-inch, 5-W hammermill with switches and ammeter, 200 hp Crocker-Wheeler explosion and dustproof motor, 3-phase, 440 amp, 3,600 rpm, complete with Cyclone. Schoeneck Farms, Inc., Nazareth, Pa.

IN THE MARKETS

EXPORTS. Preliminary data on U. S. exports of soybeans and soybean oil for October 1958, with comparable data for October 1957, reported by Foreign Agricultural Service, U. S. Department of Agriculture.

	Unit	October 1957	October 1958
Soybeans	bu.	9,887,564	12,053,133
Soybean oil:			
Crude	lb.	24,161,105	43,494,018
Refined but not further processed	lb.	4,856,456	4,442,216
Refined, deodorized and hydrogenated	lb.	9,232,130	28,433,997

Soybeans: Inspections for export by coastal areas, and country of destination, November 1958 (1,000 bu.)

Atlantic		Lake Ports	
Denmark	371	Belgium	19
The Netherlands	2,201	France	561
Belgium	46	West Germany	1,677
West Germany	625	Italy	78
Italy	131	Korea	83
Taiwan (Formosa)	729	Japan	2,428
Other	66	Other	23
Subtotal	4,169	Subtotal	8,470
Gulf		**Lake Ports**	
Denmark	1,096	Canada	1,174
The Netherlands	2,505	Grand total	13,813
		Total Jan.-Nov. 1958	70,666
		Total Jan.-Nov. 1957	72,703

Data are based on weekly reports of inspections for export by licensed inspectors and do not include rail or truck movement to Canada or Mexico. In some cases the ultimate destination of the soybeans exported is not shown on the inspection reports, therefore, the quantity of each country may vary from official Census data which are based on custom declarations.

Soybeans: Inspections for export by ports and lake shipments to Canada November 1958 (1,000 bu.)

Atlantic		Lake Ports	
Baltimore	1,660	Chicago	589
Norfolk	2,509	Toledo	585
Subtotal	4,169	Subtotal	1,174
Gulf		Totals Nov. 1958	13,813
New Orleans	3,599	Jan.-Nov. 1958	70,666
Mobile	2,375	Jan.-Nov. 1957	72,703
Port Allen	2,496		
Subtotal	8,470		

Based on weekly reports of inspections for export by licensed inspectors and does not include rail and truck movement to Canada or Mexico.

Total vessel clearance of soybeans from the Port of New Orleans for the month of November 1958 was 3,832,000 bushels, compared with 7,441,000 bushels for November 1957, according to the New Orleans Board of Trade.

Title I. P. L. 480 July-November 1958 shipments

	November 1958			July-November 1958		
	Metric tons	Unit	Quantity	Metric tons	Unit	Quantity
Cottonseed oil	215	lb.	474,000	1,072	lb.	2,363,000
Soybean oil	1,707	lb.	3,764,000	136,170	lb.	300,202,000

MELLORINE. November production of mellorine and other frozen desserts made with fats and oils other than milk-fat was estimated at 2,160,000 gallons, according to the USDA crop reporting board. This is 16% more than in November 1957 and 38% greater than the 5-year 1952-56 average for the month. Accumulated production for the first 11 months of 1958 totaled 37,775,000 gallons, 16% more than for the same period last year and 50% above the 5-year average for these months.

Production of mellorine and other frozen desserts made with fats and oils other than milk-fat, United States, 1958

	1952-56 average*	1956*	1957*	Estimated 1958	Change from 1952-56 av.	Change from 1957
	Thousand gallons				Percent	
January	1,300	1,862	1,957	2,300	+77	+18
February	1,490	2,095	2,199	2,410	+62	+10
March	1,957	2,728	2,527	2,805	+43	+11
April	2,108	2,759	2,881	3,400	+61	+18
May	2,552	3,540	3,538	4,200	+65	+19
June	3,098	3,767	3,609	4,395	+42	+22
July	3,196	3,826	4,386	4,820	+51	+10
August	3,108	3,837	4,052	4,540	+46	+12
September	2,613	2,887	3,039	3,780	+45	+24
October	2,177	2,767	2,503	2,965	+36	+18
November	1,566	1,841	1,855	2,160	+38	+16
Eleven-month total	25,165	31,909	32,546	37,775	+50	+16

* From enumerations.

FACTORY USE VEGETABLE OILS for September and October 1958. Reported by Bureau of the Census (1,000 lbs.)

Factory production and consumption, and factory and warehouse stocks, October 1958-September 1958

	Factory production		Factory consumption		Factory and warehouse stocks	
	Oct. 1958	Sept. 1958	Oct. 1958	Sept. 1958	Oct. 31, 1958	Sept. 30 1958
Cottonseed, crude	239,110	96,315	115,344	76,745	122,625	49,061
Cottonseed, refined	143,997	70,434	120,921	96,931	103,322	72,268
Soybean, crude	352,574	269,825	290,112	297,234	126,969	148,462
Soybean, refined	274,815	281,373	302,844	316,579	65,799	82,047
Vegetable foots (100% basis)	22,228	18,647	16,290	16,591	54,735	53,919
Hydrogenated vegetable oils—						
Edible:						
Cottonseed	27,289	24,527	21,934	21,347	11,634	10,232
Soybean	160,212	146,633	151,068	136,182	43,563	43,254
Other	7,526	6,105	6,792	6,288	3,142	3,046
Margarine[1]	143,623	136,552	(NA)	(NA)	34,743	26,794

NA—Not available. [1] Data for stocks exclude quantities held by consuming factories.

Factory consumption of vegetable oils, by uses, during October 1958

	Edible products			Inedible products			
	Shortening	Margarine	Other edible	Soap	Paint and varnish	Lubricants and similar oils[1]	Other inedible[2]
Cottonseed, refined	15,975	1,261	3,415	(3)	.....	(3)	192
Soybean crude	.....	.....	.....	43	376	(3)	2,057
Soybean, refined	60,935	9,862	7,919	16	7,024	38	6,280
Foots, vegetable, raw and acidulated (100% basis)	.....	.....	.....	2,573	(3)	665	.....
Hydrogenated vegetable oils, edible:							
Cottonseed	9,012	9,971	2,951	.....	.....	.....	.....
Soybean	58,055	89,695	3,208	.....	.....	.....	.....
Other	2,377	2,269	.....	.....	.....	.....	.....

[1] Includes quantities consumed in lubricants, greases, cutting oils, dielectric oils, core oils, brake fluids, and metal working. [2] Quantities consumed in linoleum and animal feeds are included in above totals. [3] Not shown to avoid disclosure of figures for individual companies.

Consumption of fats and oils in fat splitting (1,000 lbs.)

	1958			1957	
	October	Sept.	Jan.-October Cumulative	October	Jan.-October Cumulative
Soapstocks					
Vegetable foots	9,373	8,965	67,606	6,428	77,376

Source: U.S. Census Bureau.

Utilization of soybean oil meal, 1955-57 (percent)

	Crop year 1957-58	1956-57	1955-56
Livestock feed	97.3	96.2	96.4
Industrial	.2	.1	.5
Fertilizer	....	.2	....
Export	2.5	3.5	3.1
	100.0	100.0	100.0
Soybean oil			
Edible	89.5	82.5	89.7
Industrial	10.5	17.5	10.3
	100.0	100.0	100.0

National Soybean Processors Association.

PRICES. Average prices for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel).

Average farm price			Effective parity	Av. price as percent of parity	National average price support rate		
Nov. 15 1958	Oct. 15 1958	Nov. 15 1957	Nov. 15 1958	Nov. 15 1958	1958 crop	1957 crop	1956 crop
1.89	1.93	2.04	3.07	62	2.09	2.09	2.15

Average farm and parity prices from crop reporting board.

SUPPLY, DISTRIBUTION of soybeans, 1952-58, reported by Agricultural Marketing Service (1,000 bu.)

Year and quarter	Supply: Stocks at beginning of period [1] Farms	Terminal markets	CCC [2]	Processing plants	Interior mills [3]	Total stocks	Production	Total supply
1952-57 av.								
Oct.-Dec.	2,838	1,084	331	445	1,052	5,750	346,410	352,160
Jan.-Mar.	119,478	14,532	265	67,027	54,325	255,627	.....	255,627
Apr.-June	77,074	11,267	170	46,212	31,847	166,570	.....	166,570
July-Sept.	20,066	5,234	402	23,531	13,879	63,112	.....	63,112
Season						5,750	346,410	352,160
1957-58								
Oct.-Dec.	3,623	3,539	.....	1,493	1,242	9,897	479,841	489,738
Jan.-Mar.	188,359	23,993	.....	78,863	89,243	380,458	.....	380,458
Apr.-June	116,152	17,977	.....	57,983	62,301	254,413	.....	254,413
July-Sept.	26,529	10,839	.....	36,194	33,778	107,340	.....	107,340
Season						9,897	479,841	489,738
1958-59								
Oct.-Dec.	2,183	2,635	2,012	4,643	9,610	21,083	572,586	593,669

Year and quarter	Distribution: Used for seed	Crushed at mills	Net exports [4]	Feed and residual [5]	Total
1952-57 av.					
Oct.-Dec.	.....	69,900	27,273	– 640	96,533
Jan.-Mar.	.....	67,728	11,275	10,054	89,057
Apr.-June	23,865	64,309	9,700	5,584	103,458
July-Sept.	.....	57,191	8,754	– 9,843	56,102
Season	23,865	259,128	57,002	5,155	345,150
1957-58					
Oct.-Dec.	.....	85,728	39,213	—15,661	109,280
Jan.-Mar.	.....	89,045	14,898	22,102	126,045
Apr.-June	28,236	92,391	16,854	9,592	147,073
July-Sept.	.....	86,641	15,893	–16,277	86,257
Season	28,236	353,805	86,858	– 244	468,655

[1] Oct. 1 stocks in all positions include only old-crop soybeans. [2] Owned and stored in bins or other storage owned or controlled by CCC. Additional CCC-owned grain is included in other positions. [3] All off-farm storages not otherwise designated. [4] Exports minus imports which are negligible. [5] Mostly quantity fed, but includes waste, loss and statistical errors in estimates.

PRICE SUPPORT. 1958-crop soybeans put under price support through Nov. 30, 1958, compared to support totals of 1957 crops through Nov. 15 and Dec. 15, in bushels, reported by Agricultural Marketing Service.

Warehouse-stored loans	Farm-stored loans	Total under support through Nov. 30, 1958	Total under support through Nov. 15, 1957	Total under support through Dec. 15, 1957
		(including purchase agreements)		
50,451,178	15,968,510	67,031,581	21,920,550	41,104,072

Totals included 2,644,843 bushels in Arkansas, 12,288,428 bushels in Illinois, 2,155,510 bushels in Indiana, 22,234,444 bushels in Iowa, 14,362,614 bushels in Minnesota, 4,881,940 bushels in Missouri, and 2,407,581 bushels in Ohio.

PROCESSING OPERATIONS. Reported by Bureau of the Census for October and November 1958.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, November 1958-October 1958 (2,000 lbs.)

Products [1]	Production: November 1958	Production: October 1958	Shipments and transfers: November 1958	Shipments and transfers: October 1958	Stocks end of month: Nov. 30, 1958	Stocks end of month: Oct. 31, 1958
Soybean: Cake and meal ..... Millfeed (hull meal)	788,942	785,032	772,672	768,051	81,317	65,047

[1] Data on soy flour and lecithin no longer collected monthly.

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, November 1958-October 1958 (2,000 pounds)

	Net receipts at mills [1]: November 1958	Net receipts at mills [1]: October 1958	Crushed or used: November 1958	Crushed or used: October 1958	Stocks at mills: Nov. 30, 1958	Stocks at mills: Oct. 31, 1958
U. S.	1,261,585	3,531,336	1,005,893	1,004,111	3,199,055	2,943,363
Illinois ..	239,757	1,063,855	318,100	361,585	828,159	906,502
Indiana..	(2)	452,001	82,450	95,346	(2)	371,768
Iowa	102,006	453,595	161,540	164,799	299,659	359,193
Kansas ..	(2)	(2)	(2)	(2)	(2)	(2)
Kentucky	(2)	(2)	(2)	(2)	(2)	(2)
Minn.	64,952	172,124	75,414	79,751	98,272	108,734
Missouri	20,578	194,343	37,149	34,903	165,897	182,468
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)
N. Car...	46,911	(2)	3,442	.....	45,189	1,720
Ohio	98,333	478,378	92,882	92,480	404,668	399,217
Texas	(2)	(2)	(2)	(2)	(2)	(2)
All other	689,048	717,040	234,916	175,247	1,357,211	613,761

[1] Net receipts for each state are derived from the quantity of beans crushed and net change in stocks. [2] Included in "All other" to avoid disclosure of figures for individual companies.

Soybean products: Production and stocks at oil mill locations, by states, November 1958-October 1958

	Crude oil (thousands of pounds): Production November 1958	Production October 1958	Stocks Nov. 30, 1958	Stocks Oct. 31, 1958	Cake and meal (tons) [1]: Production November 1958	Production October 1958	Stocks Nov. 30, 1958	Stocks Oct. 31, 1958
U. S. ..	351,240	352,574	73,614	54,933	788,942	785,032	81,317	65,047
Ill.	113,230	128,783	15,646	13,160	244,991	277,830	21,836	23,097
Ind. ..	28,176	32,876	(2)	2,069	65,558	76,171	(2)	4,148
Iowa ..	57,004	57,190	13,329	13,921	129,388	131,040	7,739	11,489
Kansas	(2)	(2)	1,393	(2)	(2)	(2)	(2)	(2)
Ky.	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Minn...	25,908	27,394	16,155	9,306	60,071	62,225	4,464	3,520
Mo.	13,474	12,712	1,914	1,043	29,627	27,783	3,287	1,897
Nebr...	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
N. Car.	1,033	.....	(2)	(2)	2,742	.....	445	(2)
Ohio ..	30,683	30,917	6,213	6,225	74,446	73,315	7,998	7,917
Texas..	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
All other..	81,732	62,702	18,964	9,209	182,119	136,668	35,548	12,979

[1] Includes millfeed (hull meal). [2] Included in "All other" to avoid disclosure of figures for individual companies.

STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report (1,000 bu.)

	Nov. 25	Dec. 2	Dec. 9	Dec. 16	Dec. 23
U. S. soybeans in store and afloat at domestic markets					
Atlantic Coast	4,252	3,982	4,889	4,716	5,568
Gulf Coast	3,194	3,533	3,702	2,778	3,233
Northwestern and Upper Lake	3,394	3,421	3,382	3,266	3,211
Lower Lake	19,295	19,144	18,119	17,576	17,328
East Central	12,397	12,882	12,770	12,577	12,219
West Central Southwestern and Western	4,973	4,703	2,981	4,163	4,359
Total current week	47,505	47,865	45,843	45,076	45,918
Total year ago	26,133	26,707	26,555	25,654	27,031
U. S. soybeans in store and afloat at Canadian markets					
Total current week	240	486	454	414	374
Total year ago	0	0	93	39	382
Total North American commercial soybean stocks					
Current week	47,745	48,351	46,297	45,490	46,292
Year ago	26,133	26,707	26,648	25,693	27,413

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

	Nov. 21	Nov. 28	Dec. 5	Dec. 12	Dec. 19
Chicago	288	405	317	241	429
Indianapolis	42	12	10	10	6
Kansas City	45	64	18	36	47
Minneapolis	100	85	62	58	167
Omaha	14	8	11	28	10
Peoria	18	27	30	15	4
St. Joseph	2	4	5	2	—
St. Louis	41	44	10	4	6
Toledo	152	74	36	46	137
Totals	724	736	508	444	807
Total Chicago soybean stocks	16,120	15,997	15,133	14,724	14,492

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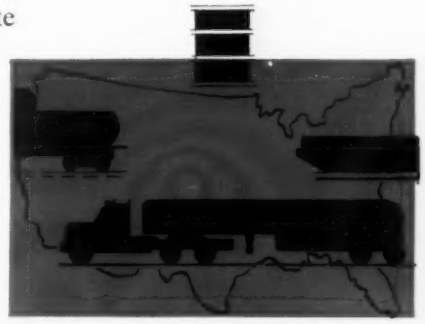

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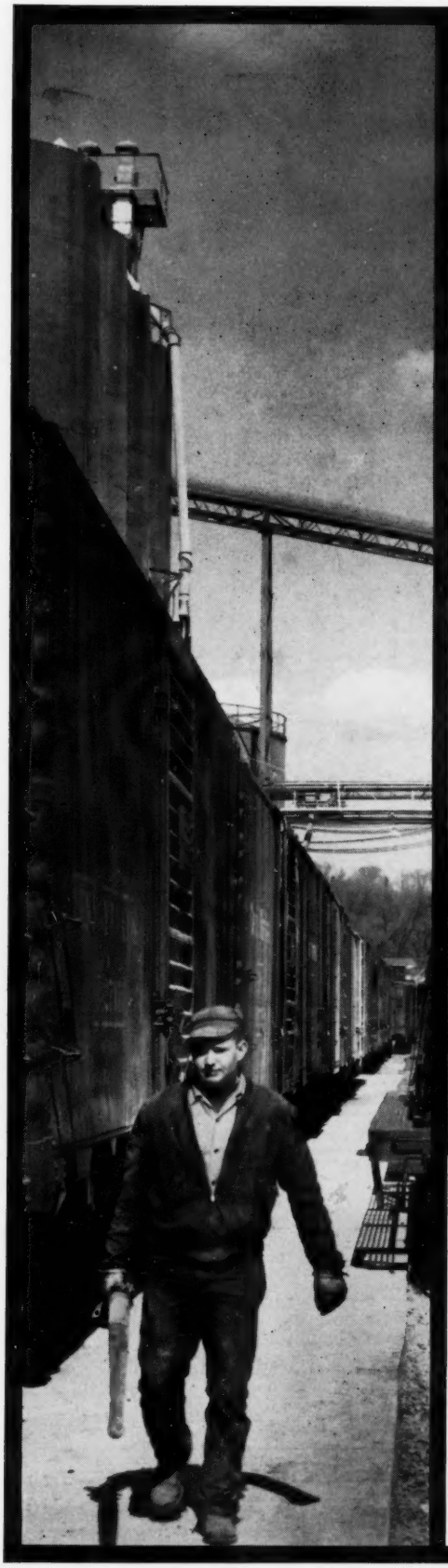

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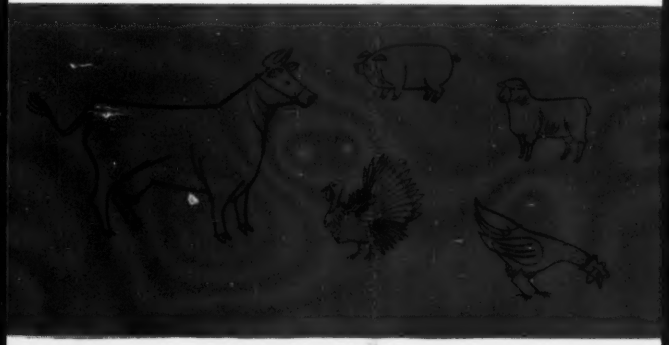

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